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SWORDS, KATHY

<120> PRECISE BREEDING

<130> 058951-0238

<140> 10/561,785

<141> 2005-12-21

<150> PCT/US2004/017424

<151> 2004-06-25

<150> 10/607,538

<151> 2003-06-27

<160> 141

<170> PatentIn version 3.5

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<223> Description of Artificial Sequence: Synthetic polynucleotide

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic polynucleotide

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agttggttta	tctttggaat	gaacctcggc	tgaggcccat	tctgaaagag	atcgatggat	8160
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gacaatccat	cgtgtcttca	aactttatgc	tggtgaacaa	gtcttagttt	ccacgaaagt	8520
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cgtaagtgtg	cgtgttatgt	ataatttgtc	taaatgttta	atatatatca	tagaacgcaa	8640
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tcgggtggac	tagtttttaa	tgtttagcaa	atgtcctatc	agttttctct	ttttgtcgaa	8760
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cgggattggt	gattttatttc	aaaactaaga	gtttttgctt	attgttctcg	tctatttttg	8880

atatcaatct tagttttata tcttttctag ttctctacgt gttaaagtgt caacacacta	8940
gcaatttggc tgcagcgtat ggattatgga actatcaagt ctgtgggatc gataaatatg	9000
cttctcagga atttgagatt ttacagtcct tatgctcatt gggttgagta taatatagta	9060
aaaaaatagg aattctatcc gcggtgatca caggcagcaa cgctctgtca tcgttacaat	9120
caacatgcta ccctccgcga gatcatccgt gtttcaaacc cggcagctta gttgccgttc	9180
ttccgaatag catcggtaac atgagcaaag tctgccgcct tacaacggct ctcccgtga	9240
cgccgtcccg gactgatggg ctgcctgtat cgagtgggtga ttttggtccg agctgccggt	9300
cggggagctg ttggctggct gga	9323

<210> 5
 <211> 546
 <212> DNA
 <213> Solanum tuberosum

<400> 5	
atgagaaatt tattcccat attgatgcta atcaccaatt tggcactcaa caacgataac	60
aacaacaaca acaacaacaa caataattat aatctcatac acgcaacgtg tagggagacc	120
ccatattact ccctatgtct caccacccta caatccgggtc cacgtagtaa cgaggttgag	180
ggtggtgatg ccatcaccac cctaggcctc atcatggtgg acgcggtgaa atcaaagtcc	240
atagaaataa tggaaaaaat aaaagagcta gagaaatcga accctgagtg gcgggccccca	300
cttagccagt gttacgtggc gtataatgcc gtcctacgag ccgatgtaac ggtagccgtt	360
gaagccttaa agaaggggtgc ccccaaattt gctgaagatg gtatggatga tggtgttgct	420
gaagcacaaa cttgtgagta tagttttaat tattataata aattggattt tccaatttct	480
aatttgagta gggaaataat tgaactatca aaagttgcta aatccataat tagaatgtta	540
ttatga	546

<210> 6
 <211> 658
 <212> DNA
 <213> Solanum tuberosum

<400> 6	
gaaccatgca tctcaatctt aatactaaaa aatgcaacaa aattctagtg gagggaccag	60
taccagtaca ttagatatta tcttttatta ctataataat attttaatta acacgagaca	120
taggaatgtc aagtggtagc ggtaggagg agttggttca gttttttaga tactaggaga	180
cagaaccgga ggggcccatt gcaaggcca agttgaagtc cagccgtgaa tcaacaaaga	240
gagggcccat aatactgtcg atgagcattt ccctataata cagtgtccac agttgccttc	300
cgctaaggga tagccaccg ctattctctt gacacgtgtc actgaaacct gctacaaata	360
aggcaggcac ctctcattc tcacactcac tctctcacac agctcaacaa gtggttaactt	420
ttactcatct cctccaatta tttctgattt catgcatgtt tccctacatt ctattatgaa	480
tcgtgttatg gtgtataaac gttgtttcat atctcatctc atctattctg attttgattc	540

tcttgcctac tgaatttgac cctactgtaa tcggtgataa atgtgaatgc ttcctcttct	600
tcttcttctt ctcagaaatc aatttctgtt ttgtttttgt tcatctgtag cttggtag	658

<210> 7
 <211> 355
 <212> DNA
 <213> Solanum tuberosum

<400> 7	
ttttaatggt tagcaaatgt cctatcagtt ttctcttttt gtcgaacggg aatttagagt	60
tttttttgct atatggattt tcgtttttga tgtatgtgac aaccctcggg attgttgatt	120
tatttcaaaa ctaagagttt ttgcttattg ttctcgtcta ttttgatat caatcttagt	180
tttatatctt ttctagttct ctacgtgtta aatgttcaac acactagcaa tttggctgca	240
gcgtatggat tatggaacta tcaagtctgt gggatcgata aatatgcttc tcaggaattt	300
gagattttac agtctttatg ctcatgggt tgagtataat atagtaaaaa aatag	355

<210> 8
 <211> 179
 <212> DNA
 <213> Solanum tuberosum

<400> 8	
accttatttc actaccactt tccactctcc aatccccata ctctctgctc caatcttcat	60
tttgcttcgt gaattcatct tcatcgaatt tctcgacgct tcttcgctaa tttctcgtt	120
acttcactaa aaatcgacgt ttctagctga acttgagtga attaagccag tgggaggat	179

<210> 9
 <211> 569
 <212> DNA
 <213> Solanum tuberosum

<400> 9	
gttagaaatc ttctctatth ttggtttttg tctgtttaga ttctcgaatt agctaatacag	60
gtgctgttat agcccttaat tttgagtttt ttttcggttg ttttgatgga aaaggcctaa	120
aatttgagtt tttttacgtt ggtttgatgg aaaaggccta caattggagt tttccccgtt	180
gttttgatga aaaagcccct agtttgagat tttttttctg tcgattcgat tctaaagggt	240
taaaattaga gtttttacat ttgtttgatg aaaaaggcct taaatttgag tttttccggt	300
tgatttgatg aaaaagcccct agaatttggt ttttttcgtc ggtttgattc tgaaggccta	360
aaatttgagt ttctccggct gttttgatga aaaagcccta aatttgagtt tctccggctg	420
ttttgatgaa aaagccctaa atttgagttt tttccccgtg ttttagattg tttggtttta	480
attctcgaat cagctaataca gggagtgtga aaagccctaa aatttgagtt tttttcgtt	540
ttctgattgt tgtttttatg aatttgag	569

<210> 10
 <211> 1738
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 10

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ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg      60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac      120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact      180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa      240
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt      300
gccttccgct aagggatagc caccgcctat tctcttgaca cgtgtcactg aaacctgcta      360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat      420
ccaccttatt tctactaccac tttccactct ccaatcccca tactctctgc tccaatcttc      480
atittgcttc gtgaattcat cttcatcgaa tttctcgacg cttcttcgct aatttcctcg      540
ttacttcact agaaatcgac gtttctagct gaacttgagt gaattaagcc agtgggagga      600
tgaattcaag gttagaaatc ttctctatct ttggtttttg tctgtttaga ttctcgaatt      660
agctaatacag gtgctgttat agcccttaat tttagagttt ttttcggttg ttttgatgga      720
aaaggcctaa aatttgagtt tttttacggt ggtttgatgg aaaaggccta caattggagt      780
tttccccggt gttttgatga aaaagcccct agtttgagat tttttttctg tcgattcgat      840
tctaaagggt taaaattaga gtttttacat ttgtttgatg aaaaaggcct taaatttgag      900
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tgaaggccta aaatttgagt ttctccggct gttttgatga aaaagcccta aatttgagtt     1020
tctccggctg ttttgatgaa aaagccctaa atttgagttt tttccccgtg ttttagattg     1080
tttggtttta attctcgaat cagctaatac gggagtgtga aaagccctaa aatttgagtt     1140
tttttcggtg ttctgattgt tgtttttatg aatttgcaga tggatatcat cctccactg      1200
gcttaattca ctcaagttca gctagaaacg tcgatttcta gtgaagtaac gaggaaatta      1260
gcgaagaagc gtcgagaaat tcgatgaaga tgaattcacg aagcaaaatg aagattggag      1320
cagagagtat ggggattgga gagtggaag tggtagtgaataaaggtaag cttttgattt      1380
taatgtttag caaatgtcct atcagttttc tctttttgtc gaacggtaat ttagagtttt      1440
ttttgctata tggattttcg tttttgatgt atgtgacaac cctcgggatt gttgatttat      1500
ttcaaaacta agagtttttg cttattgttc tcgtctatct tggatatcaa tcttagtttt      1560
atatcttttc tagttctcta cgtgttaaata gttcaacaca ctagcaattt ggctgcagcg      1620
tatggattat ggaactatca agtctgtggg atcgataaat atgcttctca ggaatttgag      1680
attttacagt ctttatgctc attgggttga gtataatata gtaaaaaaat agtctaga      1738
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<210> 11

<211> 237

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 11

gtaacttttta ctcattctcct ccaattatatt ctgatttcat gcatgtttcc ctacattcta	60
ttatgaatcg tgttatggtg tataaacggt gtttcatatc tcattctcatc tattctgatt	120
ttgattctct tgcctactga atttgaccct actgtaatcg gtgataaatg tgaatgcttc	180
ctcttcttct tcttcttctc agaaatcaat ttctgttttg tttttgttca tctgtag	237

<210> 12

<211> 1406

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 12

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg	60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac	120
gagacatagg aatgtcaagt ggtagcggta ggaggagggtt gggttcagttt ttagataact	180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtcacgc cgtgaatcaa	240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt	300
gccttccgct aagggatagc caccgctat tctcttgaca cgtgtcactg aaacctgcta	360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat	420
ccaccttatt tcaactaccac tttccactct ccaatcccca tactctctgc tccaatcttc	480
atcttgcctc gtgaattcat cttcatcgaa tttctcgacg cttcttcgct aatttcctcg	540
ttacttcaat agaaatcgac gtttctagct gaacttgagt gaattaagcc agtgggagga	600
tgaattcgtg gtaactttta ctcattctcct ccaattatatt ctgatttcat gcatgtttcc	660
ctacattcta ttatgaatcg tgttatggtg tataaacggt gtttcatatc tcattctcatc	720
tattctgatt ttgattctct tgcctactga atttgaccct actgtaatcg gtgataaatg	780
tgaatgcttc ctcttcttct tcttcttctc agaaatcaat ttctgttttg tttttgttca	840
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gatttctagt gaagtaacga ggaaattagc gaagaagcgt cgagaaattc gatgaagatg	960
aattcacgaa gcaaaatgaa gattggagca gagagtatgg ggattggaga gtggaaagtg	1020
gtagtgaaat aaggtaagct tttgatttta atgttttagca aatgtcctat cagttttctc	1080
tttttgctga acggtaattt agagtttttt ttgctatatg gatttttcggt tttgatgtat	1140
gtgacaaccc tcgggattgt tgatttattt caaaactaag agtttttgct tattgttctc	1200
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tcaacacact agcaatttggt ctgcagcgta tggattatgg aactatcaag tctgtgggat	1320
cgataaatat gcttctcagg aatttgagat ttacagctct ttatgctcat tgggttgagt	1380
ataatatagt aaaaaaatag tctaga	1406

<210> 13
 <211> 686
 <212> DNA
 <213> Solanum tuberosum

<400> 13
 gaaccatgca tctcaatctt aataactaaaa aatgcaacaa aattctagtg gagggaccag 60
 taccagtaca ttagatatta tcttttatta ctataataat attttaatta acacgagaca 120
 taggaatgtc aagtggtagc ggtagggagg agttggttca gttttttaga tactaggaga 180
 cagaaccgga ggggcccatt gcaaggccca agttgaagtc cagccgtgaa tcaacaaaga 240
 gagggcccat aatactgtcg atgagcattt ccctataata cagtgtccac agttgccttc 300
 cgctaaggga tagccacccg ctatttctctt gacacgtgtc actgaaacct gctacaaata 360
 aggcaggcac ctctcattc tcacactcac tctctcacac agctcaacaa gtggtaactt 420
 ttactcatct cctccaatta tttctgattt catgcatgtt tccctacatt ctattatgaa 480
 tcgtgttatg gtgtataaac gttgtttcat atctcatctc atctattctg attttgattc 540
 tcttgcttac tgaatttgac cctactgtaa tcggtgataa atgtgaatgc ttcctcttct 600
 tcttcttctt ctcagaaatc aatttctgtt ttgtttttgt tcatctgtag cttggtagat 660
 tccccTTTTT gtagaccaca catcac 686

<210> 14
 <211> 2046
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: synthetic polynucleotide

<400> 14
 ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
 gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
 gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt ttagatact 180
 aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
 caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt 300
 gccttccgct aagggatagc caccgcgtat tctcttgaca cgtgtcactg aaacctgcta 360
 caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
 cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg 480
 tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt 540
 gatccaaagc catcacatca tgttcacctt cagctattgg aggagaagtg agaagtagga 600
 attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggtagata 660
 tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc 720
 attatgcact gaataatacc gcagcatcaa agaaggaatt caagggttaga aatcttctct 780
 atttttgggt tttgtctgtt tagattctcg aattagctaa tcaggtgctg ttatagccct 840

taattttgag ttttttttcg gttgttttga tggaaaaggc ctaaaatttg agttttttta	900
cgttggtttg atggaaaagg cctacaattg gagttttccc cgttgttttg atgaaaaagc	960
ccctagtttg agattttttt tctgtcgatt cgattctaaa ggtttaaaat tagagttttt	1020
acatttgttt gatgaaaaag gccttaaatt tgagtttttc cggttgattt gatgaaaaag	1080
ccctagaatt tgtgtttttt cgtcggtttg attctgaagg cctaaaattt gagtttctcc	1140
ggctgttttg atgaaaaagc cctaaatttg agtttctccg gctgttttga tgaaaaagcc	1200
ctaaatttga gttttttccc cgtgttttag attgtttggt ttaattctc gaatcagcta	1260
atcagggagt gtgaaaagcc ctaaaatttg agtttttttc gttgttctga ttgttgtttt	1320
tatgaatttg cagatggata tccttctttg atgctgcggt attattcagt gcataatgca	1380
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catacccagc taatttagct tttaaaaagt ttttcttatt attcctcata ttgcaattcc	1500
tacttctcac ttctcctcca atagctgaag gtgaacatga tgtgatggct ttggatcacg	1560
tataatcata caggtaactt catgggaggt atcaggtaag tggtcacaga tctgatacaa	1620
tgagaatatg atcacatctg tggctcttctc tgaacaacat acaactagaa tatgaaagct	1680
tttgatttta atgttttagca aatgtcctat cagttttctc tttttgtcga acggtaattt	1740
agagtttttt ttgctatatg gattttcgtt ttgatgtat gtgacaacc tcgggattgt	1800
tgatttattt caaaactaag agtttttgct tattgttctc gtctattttg gatatcaatc	1860
ttagttttat atcttttcta gttctctacg tgttaaatgt tcaacacact agcaatttg	1920
ctgcagcgta tggattatgg aactatcaag tctgtgggat cgataaatat gcttctcagg	1980
aatttgagat ttacagctt ttatgctcat tgggttgagt ataatatagt aaaaaatag	2040
tctaga	2046

<210> 15

<211> 1714

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic polynucleotide

<400> 15

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gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac	120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt ttagatact	180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa	240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt	300
gccttccgct aagggatagc caccgcgtat tctcttgaca cgtgtcactg aaacctgcta	360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat	420
cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg	480
tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt	540

gatccaaagc catcacatca tgttcacctt cagctattgg aggagaagtg agaagtagga	600
attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggatatgata	660
tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc	720
attatgcact gaataatacc gcagcatcaa agaagggaatt cgtggtaact tttactcatc	780
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gggtgtataaa cgttgtttca tatctcatct catctattct gatttttgatt ctcttgcccta	900
ctgaatttga ccctactgta atcggtgata aatgtgaatg cttcctcttc ttcttcttct	960
tctcagaaat caatttctgt ttgttttttg ttcatctgta gcttgatata cttctttgat	1020
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tacaatgttt acacatttct ccctatatca taccagcta atttagcttt taaaagttt	1140
ttcttattat tcctcatatt gcaattccta cttctcactt ctcctccaat agctgaaggt	1200
gaacatgatg tgatggcttt ggatcacgta taatcataca ggtaacttca tgggaggtat	1260
caggtaagtg gtcacagatc tgatacaatg agaatatgat cacatctgtg gtcttctctg	1320
aacaacatac aactagaata tgaaagcttt tgattttaat gtttagcaaa tgcctatca	1380
gttttctctt ttgtgcgaac ggtaatttag agtttttttt gctatatgga ttttcgtttt	1440
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ttgttctcgt ctattttgga tatcaatctt agttttatat cttttctagt tctctacgtg	1560
ttaaattgttc aacacactag caatttggtc gcagcgatg gattatggaa ctatcaagtc	1620
tgtgggatcg ataaatatgc ttctcaggaa tttagatatt tacagtcttt atgctcattg	1680
ggttgagtat aatatagtaa aaaaatagtc taga	1714

<210> 16
 <211> 333
 <212> DNA
 <213> Solanum tuberosum

<400> 16	
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tcagatctgt gaccacttac ctgatactc ccatgaagtt acctgtatga ttatacgtga	120
tcctaaagcca tcacatcatg ttcaccttca gctattggag gagaagtgag aagtaggaat	180
tgcaatatga ggaataataa gaaaaacttt gtaaaagcta aattagctgg gtatgatata	240
gggagaaatg tgtaaacatt gtactatata tagtatatac acacgcatta tgtattgcat	300
tatgcactga ataataccgc agcatcaaag aag	333

<210> 17
 <211> 2046
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 17
 ggtaccgaac catgcatctc aatctttaata ctaaaaaatg caacaaaatt ctagtggagg 60
 gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
 gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact 180
 aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtcacgc cgtgaatcaa 240
 caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt 300
 gccttccgct aagggatagc caccgcctat tctcttgaca cgtgtcactg aaacctgcta 360
 caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420
 cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg 480
 tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt 540
 gatccaaagc catcacatca tgttcacctt cagctattgg aggagaagtg agaagtagga 600
 attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggtatgata 660
 tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc 720
 attatgcact gaataatacc gcagcatcaa agaaggaatt caaggtaga aatcttctct 780
 atttttgggt tttgtctgtt tagattctcg aattagctaa tcagggtgctg ttatagccct 840
 taattttgag ttttttttcg gttgttttga tggaaaaggc ctaaaatttg agttttttta 900
 cgttggtttg atggaaaagg cctacaattg gagttttccc cgttgttttg atgaaaagc 960
 ccctagtttg agattttttt tctgtcgatt cgattctaaa ggtttaaaat tagagttttt 1020
 acatttgttt gatgaaaaag gccttaaat tgagtttttc cggttgattt gatgaaaaag 1080
 ccctagaatt tgtgtttttt cgtcggtttg attctgaagg cctaaaattt gagtttctcc 1140
 ggctgttttg atgaaaagc cctaaatttg agtttctccg gctgttttga tgaaaagcc 1200
 ctaaaattga gttttttccc cgtgttttag attgtttggg ttttaattctc gaatcagcta 1260
 atcaggaggt gtgaaaagcc ctaaaatttg agtttttttc gttgttctga ttgttgtttt 1320
 tatgaatttg cagatggata tccttctttg atgctgcggg attattcagt gcataatgca 1380
 atacataatg cgtgtgtata tactatatat agtacaatgt ttacacattt ctccctatat 1440
 catacccagc taatttagct tttacaaagt ttttcttatt attcctcata ttgcaattcc 1500
 tacttctcac ttctcctcca atagctgaag gtgaacatga tgtgatggct ttggatcacg 1560
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 tgagaatatg atcacatctg tggcttctc tgaacaacat acaactagaa tatgaaagct 1680
 tttgatttta atgttttagc aatgtcctat cagttttctc tttttgtcga acggtaat 1740
 agagtttttt ttgctatatg gattttcggt tttgatgtat gtgacaaccc tcgggattgt 1800
 tgattttatt caaaactaag agtttttgct tattgttctc gtctattttg gatatcaatc 1860
 ttagttttat atcttttcta gttctctacg tgttaaatgt tcaacacact agcaatttgg 1920
 ctgcagcgta tggattatgg aactatcaag tctgtgggat cgataaatat gcttctcagg 1980
 aatttgagat ttacagtct ttatgctcat tgggttgagt ataatatagt aaaaaaatag 2040

tctaga

2046

<210> 18

<211> 1714

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 18

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg	60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac	120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact	180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa	240
caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt	300
gccttccgct aagggatagc caccgcctat tctcttgaca cgtgtcactg aaacctgcta	360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat	420
cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg	480
tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt	540
gatccaaagc catcacatca tggtcacctt cagctatttg aggagaagtg agaagtagga	600
attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggtatgata	660
tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc	720
attatgcact gaataatacc gcagcatcaa agaaggaatt cgtggtaact tttactcatc	780
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ggtgtataaa cgttgtttca tatctcatct catctattct gattttgatt ctcttgcccta	900
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tctcagaaat caatttctgt ttgttttttg ttcacttgta gcttgatata cttctttgat	1020
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tacaatgttt acacatttct ccctatatca taccagcta atttagcttt taaaaagttt	1140
ttcttattat tcctcatatt gcaattccta cttctcactt ctctccaat agctgaagg	1200
gaacatgatg tgatggcttt ggatcacgta taatcataca ggtaacttca tgggaggtat	1260
caggtaagtg gtcacagatc tgatacaatg agaatatgat cacatctgtg gtcttctctg	1320
aacaacatac aactagaata tgaaagcttt tgattttaat gtttagcaaa tgtcctatca	1380
gttttctctt ttgtgcgaac ggtaatttag agtttttttt gctatatgga ttttcgtttt	1440
tgatgtatgt gacaaccctc gggattgttg atttatttca aaactaagag tttttgctta	1500
ttgttctcgt ctatttttga tatcaatctt agttttatat cttttctagt tctctacgtg	1560
ttaaagtgtc aacacactag caatttggct gcagcgtatg gattatggaa ctatcaagtc	1620
tgtgggatcg ataaatatgc ttctcaggaa ttgagattt tacagtcctt atgctcattg	1680
ggttgagtat aatatagtaa aaaaatagtc taga	1714

<210> 19
 <211> 2322
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 19
 ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60
 gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120
 gagacatagg aatgtcaagt ggtagcggta ggaggaggatt ggttcagttt tttagatact 180
 aggagacaga accggaggggg ccctattgcaa ggcccaagtt gaagtccagc cgtgaatcaa 240
 caaagagagg gcccataata ctgtcgatga gcatttccct ataatacagt gtccacagtt 300
 gccttccgct aagggatagc caccgcgtat tctcttgaca cgtgtcactg aaacctgcta 360
 caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg 420
 taacttttac tcattctctc caattatttc tgatttcatg catgtttccc tacattctat 480
 tatgaatcgt gttatggtgt ataaacgttg tttcatatct catctcatct attctgattt 540
 tgattctctt gcctactgaa tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc 600
 tcttcttctt cttcttctca gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg 660
 gtagattccc ctttttgtag accacacatc acggatcctc atattctagt tgtatgttgt 720
 tcagagaaga ccacagatgt gatcatattc tcattgtatc agatctgtga ccacttacct 780
 gatactccc atgaagttac ctgtatgatt atacgtgatc caaagccatc acatcatgtt 840
 caccttcagc tattggagga gaagtgagaa gtaggaattg caatatgagg aataataaga 900
 aaaactttgt aaaagctaaa ttagctgggt atgatatagg gagaaatgtg taaacattgt 960
 actatatata gtatatacac acgcattatg tattgcatta tgcactgaat aataccgcag 1020
 catcaaagaa ggaattcaag gttagaaatc ttctctatct ttggtttttg tctgtttaga 1080
 ttctcgaatt agctaatacag gtgctgttat agcccttaat tttagagttt ttttcggttg 1140
 ttttgatgga aaaggcctaa aatttgagtt tttttacggt ggtttgatgg aaaaggccta 1200
 caattggagt tttccccggt gttttgatga aaaagcccct agtttgagat ttttttctg 1260
 tcgattcgat tctaaagggt taaaattaga gtttttacat ttgtttgatg aaaaaggcct 1320
 taaatttgag tttttccggt tgatttgatg aaaaagccct agaatttggt ttttttcgtc 1380
 ggtttgattc tgaaggccta aaatttgagt ttctccggct gttttgatga aaaagcccta 1440
 aatttgagtt tctccggctg ttttgatgaa aaagccctaa atttgagttt tttccccgtg 1500
 ttttagattg tttggtttta attctcgaat cagctaatac gggagtgtga aaagccctaa 1560
 aatttgagtt tttttcgttg ttctgattgt tgtttttatg aatttgcaga tggatatcct 1620
 tctttgatgc tgcggtatta ttcagtgcac aatgcaatac ataatgcgtg tgtatatact 1680
 atatatagta caatgtttac acatttctcc ctatatcata cccagctaatt ttagctttta 1740

caaagttttt cttattattc ctcattattgc aattcctact tctcacttct cctccaatag	1800
ctgaagggtga acatgatgtg atggcctttgg atcacgtata atcatacagg taacttcatg	1860
ggagggtatca ggtaagtggg cacagatctg atacaatgag aatatgatca catctgtggg	1920
cttctctgaa caacatacaa ctagaatatg aaagcttttg attttaatgt ttagcaaatg	1980
tcctatcagt tttctctttt tgtcgaacgg taatttagag ttttttttgc tatatggatt	2040
ttcgtttttg atgtatgtga caaccctcgg gattgttgat ttatttcaa actaagagtt	2100
tttgcttatt gtctcgtct attttgata tcaatcttag tttatatct tttctagttc	2160
tctacgtgtt aaatgttcaa cacactagca atttggctgc agcgtatgga ttatggaact	2220
atcaagtctg tgggatcgat aaatatgctt ctcaggaatt tgagatttta cagtctttat	2280
gctcattggg ttgagtataa tatagtaaaa aaatagtcta ga	2322

<210> 20

<211> 1714

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 20

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg	60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac	120
gagacatagg aatgtcaagt ggtagcggta ggaggagggt gggttcagttt ttagataact	180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa	240
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt	300
gccttccgct aagggatagc caccgctat tctcttgaca cgtgtcactg aaacctgcta	360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat	420
cctcatattc tagttgtatg ttgttcagag aagaccacag atgtgatcat attctcattg	480
tatcagatct gtgaccactt acctgatacc tcccatgaag ttacctgtat gattatacgt	540
gatccaaagc catcacatca tggtcacctt cagctatttg aggagaagtg agaagtagga	600
attgcaatat gaggaataat aagaaaaact ttgtaaaagc taaattagct gggatgata	660
tagggagaaa tgtgtaaaca ttgtactata tatagtatat acacacgcat tatgtattgc	720
attatgcact gaataatacc gcagcatcaa agaaggaatt cgtggtaact ttactcatc	780
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ggtgtataaa cgttgtttca tatctcatct catctattct gattttgatt ctcttgcccta	900
ctgaatttga ccctactgta atcgggtgata aatgtgaatg cttcctcttc ttcttcttct	960
tctcagaaat caatttctgt tttgtttttg ttcattctgta gcttgatata cttctttgat	1020
gctgcggtat tattcagtgatc ataataatgc acataatgac tgtgtatata ctatatatag	1080
tacaatgttt acacatttct ccctatatca taccagcta atttagcttt tacaaggttt	1140
ttcttattat tcctcatatt gcaattccta cttctcactt ctcctccaat agctgaagg	1200

gaacatgatg tgatggcttt ggatcacgta taatcataca ggtaacttca tgggaggtat	1260
caggtaagtg gtcacagatc tgatacaatg agaatatgat cacatctgtg gtcttctctg	1320
aacaacatac aactagaata tgaaagcttt tgattttaat gtttagcaaa tgtcctatca	1380
gttttctctt tttgtcgaac ggtaatttag agtttttttt gctatatgga ttttcgtttt	1440
tgatgtatgt gacaaccctc gggattgttg atttatttca aaactaagag tttttgctta	1500
ttgttctcgt ctattttgga tatcaatctt agttttatat cttttctagt tctctacgtg	1560
ttaaagtgtc aacacactag caatttggct gcagcgtatg gattatggaa ctatcaagtc	1620
tgtgggatcg ataaatatgc ttctcaggaa tttagattt tacagtcttt atgctcattg	1680
ggttgagtat aatatagtaa aaaaatagtc taga	1714

<210> 21
 <211> 273
 <212> DNA
 <213> Solanum tuberosum

<400> 21	
ttagagtgtg ggtaagtaat taagttaggg atttgtggga aatggacaaa tataagagag	60
tgcaggggag tagtgcagga gattttctgt cttttattga taaataaaaa aagggtgaca	120
tttaatttcc acaagaggac gcaacacaac acacttaatt cctgtgtgtg aatcaataat	180
tgacttctcc aatcttcatc aataaaataa ttcacaatcc tcactctctt atcactctca	240
ttcgaaaagc tagatttgca tagagagcac aaa	273

<210> 22
 <211> 158
 <212> DNA
 <213> Solanum tuberosum

<400> 22	
gagggggaag tgaatgaaaa ataacaaagg cacagtaagt agtttctctt tttatcatgt	60
gatgaaggta tataatgtat gtgtaagagg atgatgttat taccacataa taagagatga	120
agagtctcat tttctgctta aaaaaacaat tcactggc	158

<210> 23
 <211> 1917
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 23	
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg	60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac	120
gagacatagg aatgtcaagt ggtagcggta ggaggaggtt ggttcagttt tttagatact	180
aggagacaga accggagggg ccatttgcaa ggcccaagtt gaagtccagc cgtgaatcaa	240
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt	300

gccttccgct aagggatagc caccgcgtat tctcttgaca cgtgtcactg aaacctgcta	360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat	420
ccgagtgtgg gtaagtaatt aagttaggga tttgtgggaa atggacaaat ataagagagt	480
gcagggggagt agtgcaggag attttcgtgc ttttattgat aaataaaaaa agggtgacat	540
ttaattttcca caagaggacg caacacaaca cacttaattc ctgtgtgtga atcaataatt	600
gacttctcca atcttcatca ataaaataat tcacaatcct cactctctta tcactctcat	660
tcgaaaagct agatttgcag agagagcaca gaattcaagg ttagaaatct tctctatttt	720
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ttgagttttt tttcggttgt tttgatggaa aaggcctaaa atttgagttt ttttacgttg	840
gtttgatgga aaaggcctac aattggagtt ttccccgttg ttttgatgaa aaagccccta	900
gtttgagatt ttttttctgt cgattcgatt ctaaaggttt aaaattagag tttttacatt	960
tgtttgatga aaaaggcctt aaatttgagt ttttccggtt gatttgatga aaaagcccta	1020
gaatttgtgt tttttcgtcg gtttgattct gaaggcctaa aatttgagtt tctccggctg	1080
ttttgatgaa aaagccctaa atttgagttt ctccggctgt tttgatgaaa aagccctaaa	1140
tttgagtttt ttccccgtgt tttagattgt ttggttttta ttctcgaatc agctaatacag	1200
ggagtgtgaa aagccctaaa atttgagttt ttttcgttgt tctgattgtt gtttttatga	1260
atttgcagat ggatatctgt gctctctatg caaatctagc ttttcgaatg agagtataa	1320
gagagtgagg attgtgaatt attttattga tgaagattgg agaagtcaat tattgattca	1380
cacacaggaa ttaagtgtgt tgtgttgcgt cctcttgtgg aaattaaatg tcaccctttt	1440
tttattttatc aataaaagca cgaaaatctc ctgcactact cccctgcact ctcttatatt	1500
tgtccatttc ccacaaatcc ctaacttaat tacttaccca cactctaagc ttttgatttt	1560
aatgttttagc aaatgtccta tcagttttct ctttttgtcg aacggtaatt tagagttttt	1620
tttgctatat ggattttcgt ttttgatgta tgtgacaacc ctcgggattg ttgattttatt	1680
tcaaaactaa gagtttttgc ttattgttct cgtctatttt ggatatcaat cttagtttta	1740
tatcttttct agttctctac gtgttaaata ttcaacacac tagcaatttg gctgcagcgt	1800
atggattatg gaactatcaa gtctgtggga tcgataaata tgcttctcag gaatttgaga	1860
ttttacagtc tttatgctca ttgggttgag tataatatag taaaaaaata gtctaga	1917

<210> 24

<211> 1585

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 24

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg	60
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gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac	120
---	-----

gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact	180
---	-----

aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa	240
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt	300
gccttccgct aagggatagc caccgctat tctcttgaca cgtgtcactg aaacctgcta	360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat	420
ccgagtgtgg gtaagtaatt aagttaggga tttgtgggaa atggacaaat ataagagagt	480
gcaggggagt agtgcaggag attttcgtgc ttttattgat aaataaaaaa aggggtgacat	540
ttaattttcca caagaggacg caacacaaca cacttaattc ctgtgtgtga atcaataatt	600
gacttctcca atcttcatca ataaaataat tcacaatcct cactctctta tcactctcat	660
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caattatttc tgatttcatg catgtttccc tacattctat tatgaatcgt gttatgggtg	780
ataaacgttg tttcataatc catctcatct attctgattt tgattctctt gcctactgaa	840
tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc tcttcttctt cttcttctca	900
gaaatcaatt tctgttttgt tttgtttcat ctgtagcttg atatctgtgc tctctatgca	960
aatctagctt ttcgaatgag agtgataaga gagtgaggat tgtgaattat tttattgatg	1020
aagattggag aagtcaatta ttgattcaca cacaggaatt aagtgtgttg tgttgcgctc	1080
tcttgtggaa attaaatgtc accctttttt tatttatcaa taaaagcacg aaaatctcct	1140
gcactactcc cctgcactct cttatatttg tccatttccc acaaaccctt aacttaatta	1200
cttaccacac ctctaagctt ttgattttaa tgtttagcaa atgtcctatc agttttctct	1260
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tgacaacctt cgggattggt gatttatttc aaaactaaga gtttttgctt attgttctcg	1380
tctatttttg atatcaatct tagttttata tcttttctag ttctctacgt gttaaagtgt	1440
caacacacta gcaatttggc tgcagcgtat ggattatgga actatcaagt ctgtgggatc	1500
gataaatatg cttctcagga atttgagatt ttacagtcct tatgctcatt gggttgagta	1560
taatatagta aaaaaatagt ctaga	1585

<210> 25

<211> 2193

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 25

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg	60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac	120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact	180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa	240
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt	300

gccttccgct aagggatagc caccgcgtat tctcttgaca cgtgtcactg aaacctgcta	360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg	420
taacttttac tcatctcctc caattatttc tgatttcattg catgtttccc tacattctat	480
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tagggatttg tgggaaatgg acaaataata gagagtgcag gggagtagtg caggagattt	780
tcgtgctttt attgataaat aaaaaaaggg tgacatttaa tttccacaag aggacgcaac	840
acaacacact taattcctgt gtgtgaatca ataattgact tctccaatct tcatcaataa	900
aataattcac aatcctcact ctcttatcac tctcattcga aaagctagat ttgcatagag	960
agcacagaat tcaaggttag aaatcttctc tatttttggg tttgtctgt ttagattctc	1020
gaattagcta atcaggtgct gttatagccc ttaattttga gtttttttc ggttgttttg	1080
atggaaaagg cctaaaattt gagttttttt acgttggttt gatggaaaag gcctacaatt	1140
ggagttttcc ccgttgttt gatgaaaaag cccctagttt gagatttttt ttctgtcgat	1200
tcgattctaa aggtttaaaa ttagagtttt tacatttggt tgatgaaaaa ggccttaaat	1260
ttgagttttt ccggttgatt tgatgaaaaa gccctagaat ttgtgttttt tcgtcggttt	1320
gattctgaag gcctaaaatt tgagtctctc cggctgtttt gatgaaaaag ccctaaattt	1380
gagtttctcc ggctgttttg atgaaaaagc cctaaatttg agttttttcc ccgtgtttta	1440
gattgttttg ttttaattct cgaatcagct aatcagggag tgtgaaaagc cctaaaattt	1500
gagttttttt cggtgttctg attgttgttt ttatgaattt gcagatggat atctgtgctc	1560
tctatgcaaa tctagctttt cgaatgagag tgataagaga gtgaggattg tgaattattt	1620
tattgatgaa gattggagaa gtcaattatt gattcacaca caggaattaa gtgtgttggtg	1680
ttgcgtcctc ttgtggaaat taaatgtcac ctttttttta tttatcaata aaagcacgaa	1740
aatctcctgc actactcccc tgcactctct tatatttgct catttcccac aaatccctaa	1800
cttaattact taccacact ctaagctttt gattttaatg tttagcaaat gtcctatcag	1860
ttttctcttt ttgtcgaacg gtaatttaga gtttttttg ctatatggat tttcgttttt	1920
gatgtatgtg acaaccctcg ggattgttga tttatttcaa aactaagagt ttttgcttat	1980
tgttctcgtc tattttggat atcaatctta gttttatata ttttctagtt ctctacgtgt	2040
taaatgttca acacactagc aatttggtg cagcgtatgg attatggaac tatcaagtct	2100
gtgggatcga taaatatgct tctcaggaat ttgagatttt acagtcttta tgctcattgg	2160
gttgagtata atatagtaaa aaaatagtct aga	2193

<210> 26

<211> 1861

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 26

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg	60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac	120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact	180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtcacgc cgtgaatcaa	240
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt	300
gccttccgct aagggatagc caccgcctat tctcttgaca cgtgtcactg aaacctgcta	360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg	420
taactttttac tcatctcctc caattatttc tgatttcatg catgtttccc tacattctat	480
tatgaatcgt gttatggtgt ataaacgttg tttcatatct catctcatct attctgattt	540
tgattctctt gcctactgaa tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc	600
tcttcttctt cttcttctca gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg	660
gtagattccc cttttttag accacacatc acggatccga gtgtgggtaa gtaattaagt	720
tagggatttg tgggaaatgg acaaataata gagagtgcag gggagtagtg caggagattt	780
tcgtgctttt attgataaat aaaaaaaggg tgacatttaa tttccacaag aggacgcaac	840
acaacacact taattcctgt gtgtgaatca ataattgact tctccaatct tcatcaataa	900
aataattcac aatcctcact ctcttatcac tctcattcga aaagctagat ttgcatagag	960
agcacagaat tcgtggtaac ttttactcat ctctccaat tatttctgat ttcatgcatg	1020
tttccctaca ttctattatg aatcgtgtta tgggtgtataa acgttggttc atatctcatc	1080
tcattctattc tgattttgat tctcttgctt actgaatttg accctactgt aatcggtgat	1140
aaatgtgaat gcttctctt cttcttcttc ttctcagaaa tcaatttctg ttttgttttt	1200
gttcatctgt agcttgatat ctgtgctctc tatgcaaadc tagcttttcg aatgagagtg	1260
ataagagagt gaggattgtg aattatttta ttgatgaaga ttggagaagt caattattga	1320
ttcacacaca ggaattaagt gtgttggtgt gcgtcctctt gtggaaatta aatgtcaccc	1380
tttttttatt tatcaataaa agcacgaaaa tctcctgcac tactccccctg cactctctta	1440
tatttgtcca tttcccacaa atcccctaact taattactta cccacactct aagcttttga	1500
ttttaatggt tagcaaagt cctatcagtt ttctcttttt gtcgaacggg aatttagagt	1560
tttttttgct atatggattt tcgtttttga tgtatgtgac aaccctcggg attgttgatt	1620
tatttcaaaa ctaagagttt ttgcttattg ttctcgtcta ttttgatat caatcttagt	1680
tttatatctt ttctagttct ctacgtgtta aatgttcaac acactagcaa tttggctgca	1740
gcgtatggat tatggaacta tcaagtctgt gggatcgata aatatgcttc tcaggaattt	1800
gagattttac agtctttatg ctcatggggg tgagtataat atagtaaaaa aatagtctag	1860
a	1861

<210> 27
 <211> 1788
 <212> DNA
 <213> Solanum tuberosum

<400> 27
 atggcaagct tgtgcaatag tagtagtaca tctctcaaaa ctctttttac ttcttcctcc 60
 acttctttat ctccactcc taagccctct caacttttca tccatggaaa acgtaaccaa 120
 atgttcaaag ttcatgcaa gggtatcaat aataacggtg accaaaacgt tgaaacgaat 180
 tctgttgatc gaagaaatgt tcttcttggc ttaggtgggtc tttatgggtg tgctaattgct 240
 ataccattag ctgcatccgc tgctccaact ccacctcctg atctctcgtc ttgtagtata 300
 gccaggatta acgaaaatca ggtgggtgccg tacagttggt gcgcgccctaa gcctgatgat 360
 atggagaaaag ttccgtatta caagttccct tctatgacta agctccgtgt ccgtcagcct 420
 gctcatgaag ctaatgagga gtatatggcc aagtacaatc tggcgattag tcgaatgaga 480
 gatcttgata agacacaacc tttaaaccct attggtttta agcaacaagc taatatacat 540
 tgtgcttatt gtaatgggtg ttatagaatt ggtggcaaa agttacaagt tcataattct 600
 tggcttttct tcccgttcca tagatgggtac ttgtacttcc acgagagaaat cgtgggaaaa 660
 ttcatgtgat atccaacttt cgctttgcc tattggaatt gggaccatcc aaagggtatg 720
 cgttttcctg ccatgtatga tcgtgaaggg acttcccttt tcgatgtaac acgtgaccaa 780
 agtcaccgaa atggagcagt aatcgatctt ggttttttcg gcaatgaagt cgaaacaact 840
 caactccagt tgatgagcaa taatttaaca ctaatgtacc gtcaaatggg aactaatgct 900
 ccatgtcctc ggatgttctt tgggtggcct tatgatctcg ggattaacac tgaactcccg 960
 ggaactatag aaaacattcc tcacggtcct gtccacatct ggtctgggtac agtgagaggt 1020
 tcaactttgc ccaatgggtg aatatcaaac ggtgagaata tgggtcattt ttactcagct 1080
 gctttggacc cggttttctt ttgccatcac agcaatgtgg atcggatgtg gagcgaatgg 1140
 aaagcgacag gagggaaaag aacagatatc acacataaag gttggttgaa ctccgagttc 1200
 tttttctatg atgaaaatga aaacccttac cgtgtgaaag tccgagactg tttggacacg 1260
 aagaagatgg ggtatgatta tgcaccaatg gccaccccg ggcgtaactt caagccaata 1320
 aaaaaacta cagctgggaa agtgaataca gcttctcttc cgccagctag caatgtattc 1380
 ccagtggcta aactcgacaa agcaatttcg ttttccatca ataggccgac ttcgtcaagg 1440
 actcaacaag agaaaaatgc acaagaggag atgttgacat tcagtagcat aagatatgat 1500
 aacagagggt acataagggt cgatgtgttc ctgaacgtgg acaataatgt gaatgcgaat 1560
 gagcttgaca aggcggagtt tgcggggagt tatactagtt tgccacatgt tcatagagct 1620
 ggtgagacta atcatatcgc gactgttgat ttccagctgg cgataacgga actgttggag 1680
 gatattggtt tggaagatga agatactatt gcggtgactc tgggtgcaaa gagagggtgt 1740
 gaaggatatc ccattgaaag tgcgacgatc agtcttgcag attgttaa 1788

<210> 28

<211> 1788
 <212> DNA
 <213> Solanum tuberosum

<400> 28
 atggcaagct tgtgcaatag tagtagtaca tctctcaaaa ctctttttac ttcttcctcc 60
 acttctttat cttccactcc taagccctct caacttttca tccatggaaa acgtaaccaa 120
 atgttcaaag tttcatgcaa gggtatcaat aataacggtg accaaaacgt tgaaacgaat 180
 tctgttgatc gaagaaatgt tcttcttggc ttaggtggtc tttatggtgt tgctaattgct 240
 ataccattag ctgcatccgc tgctccaact ccacctcctg atctctcgtc ttgtagtata 300
 gccaggatta acgaaaatca ggtgggtgccg tacagttggt gcgcgcctaa gcctgatgat 360
 atggagaaaag ttccgtatta caagttccct tctatgacta agctccgtgt ccgtcagcct 420
 gctcatgaag ctaatgagga gtatatggcc aagtacaatc tggcgattag tcgaatgaga 480
 gatcttgata agacacaacc tttaaaccct attgggtttta agcaacaagc taatatacag 540
 tgggcttatg gtaatggtgc ttatagaatt ggtggcaaag agttacaagt tcataattct 600
 tggcttttct tcccgttcca tagatggtac ttgtacttcc acgagagaaat cgtgggaaaa 660
 ttcatlgatg atccaacttt cgctttgcc aattggaatt gggaccatcc aaagggtatg 720
 cgttttcctg ccatgtatga tcgtgaaggg acttcccttt tcgatgtaac acgtgaccaa 780
 agtcaccgaa atggagcagt aatcgatctt ggttttttct gcaatgaagt cgaaacaact 840
 caactccagt tgatgagcaa taatttaaca ctaatgtacc gtcaaatggt aactaatgct 900
 ccatgtcctc ggatgttctt tgggtggcct tatgatctcg ggattaacac tgaactcccg 960
 ggaactatag gaaacattcc tctcggtcct gtccacatct ggtctggtac agtgagaggt 1020
 tcaactttgc ccaatggtgc aatatcaaac ggtgagaata tgggtcattt ttactcagct 1080
 gctttggacc cggttttctt ttgccatcac agcaatgtgg atcggatgtg gagcgaatgg 1140
 aaagcgacag gagggaaaag aacagatatc acacataaag gttggttgaa ctccgagttc 1200
 tttttctatg atgaaaatga aaacccttac cgtgtgaaag tccgagactg tttggacacg 1260
 aagaagatgg ggtatgatta tgcaccaatg gccacccgt ggcgtaactt caagccaata 1320
 acaaaaacta cagctgggaa agtgaataca gcttctcttc cgccagctag caatgtattc 1380
 ccagtggcta aactcgacaa agcaatttcg ttttccatca ataggccgac ttcgtcaagg 1440
 actcaacaag agaaaaatgc acaagaggag atgttgacat tcagtagcat aagatatgat 1500
 aacagagggg acataagggt cgatgtgttc ctgaacgtgg acaataatgt gaatgcgaat 1560
 gagcttgaca aggcggaggt tgcggggagt tatactagtt tgccacatgt tcatagagct 1620
 ggtgagacta atcatatcgc gactgttgat ttccagctgg cgataacgga actgttggag 1680
 gatattgggt tggaagatga agatactatt gcggtgactc tgggtgcaaa gagaggtggt 1740
 gaaggtatct ccattgaaag tgcgacgatc agtcttgacg attgttaa 1788

<210> 29
 <211> 154
 <212> DNA

<213> Solanum tuberosum

<400> 29

ttagtctcta ttgaatctgc tgagattaca ctttgatgga tgatgctctg tttttgtttt 60

cttgttctgt tttttcctct gttgaaatca gctttgttgc ttgatttcat tgaagttggt 120

attcaagaat aaatcagtta caattatggt tggg 154

<210> 30

<211> 1691

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 30

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg 60

gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac 120

gagacatagg aatgtcaagt ggtagcggta ggagggaggt gggtcagttt tttagatact 180

aggagacaga accggagggg cccattgcaa ggcccaaggt gaagtccagc cgtgaatcaa 240

caaagagagg gcccataata ctgtc gatga gcatttcctt ataatacagt gtccacagtt 300

gccttcgct aagggatagc caccgctat tctcttgaca cgtgtcactg aaacctgcta 360

caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat 420

ccttagtctc tattgaatct gctgagatta cactttgatg gatgatgctc tgtttttggt 480

ttcttggtct gttttttcct ctggtgaaat cagctttggt gcttgatttc attgaagttg 540

ttattcaaga ataaatcagt tacaattatg gaattcaagg ttagaaatct tctctatttt 600

tggtttttgt ctgttttagat tctcgaatta gctaatacagg tgctgttata gcccttaatt 660

ttgagttttt tttcggttgt tttgatggaa aaggcctaaa atttgagttt ttttacgttg 720

gtttgatgga aaaggcctac aattggagtt ttccccgttg ttttgatgaa aaagccccta 780

gtttgagatt ttttttctgt cgattcgatt ctaaaggttt aaaattagag tttttacatt 840

tgtttgatga aaaaggcctt aaatttgagt ttttcgggtt gatttgatga aaaagcccta 900

gaatttggtt tttttcgtcg gtttgattct gaaggcctaa aatttgagtt tctccggctg 960

ttttgatgaa aaagccctaa atttgagttt ctccggctgt tttgatgaaa aagccctaaa 1020

tttgagtttt tttcccgtgt tttgattgt ttggttttta ttctcgaatc agctaatacag 1080

ggagtgtgaa aagccctaaa atttgagttt ttttcggtgt tctgattggt gtttttatga 1140

atttgcagat ggatatcctt ctttgatgct gatccataat tgtaactgat ttattcttga 1200

ataacaactt caatgaaatc aagcaacaaa gctgatttca acagaggaaa aacagaaca 1260

agaaaacaaa aacagagcat catccatcaa agtgtaatct cagcagattc aatagagact 1320

aagcttttga ttttaatggt tagcaaatgt cctatcagtt ttctcttttt gtcgaacggt 1380

aatttagagt tttttttgct atatggattt tcgtttttga tgtatgtgac aacctcggg 1440

attggtgatt tatttcaaaa ctaagagttt ttgcttattg ttctcgtcta ttttggatat 1500

caatcttagt tttatatctt ttctagttct ctacgtgta aatgttcaac acactagcaa	1560
tttggtcgca gcgtatggat tatggaacta tcaagtctgt gggatcgata aatatgcttc	1620
tcaggaattt gagattttac agtctttatg ctcatgggt tgagtataat atagtaaaaa	1680
aatagtctag a	1691

<210> 31
 <211> 1359
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 31	
ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg	60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac	120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact	180
aggagacaga accggagggg ccctattgca ggcccaagtt gaagtccagc cgtgaatcaa	240
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt	300
gccttcgct aagggatagc caccgctat tctcttgaca cgtgtcactg aaacctgcta	360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caagaaggat	420
ccttagtctc tattgaatct gctgagatta cactttgatg gatgatgctc tgtttttgtt	480
ttcttgttct gttttttcct ctgttgaaat cagctttgtt gcttgatttc attgaagttg	540
ttattcaaga ataaatcagt tacaattatg gaattcgtgg taacttttac tcatctctc	600
caattatttc tgatttcatg catgtttccc tacattctat tatgaatcgt gttatgggtg	660
ataaacgttg tttcatatct catctcatct attctgattt tgattctctt gcctactgaa	720
tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc tcttcttctt cttcttctca	780
gaaatcaatt tctgttttgt tttgttcat ctgtagcttg atatccttct ttgatgctga	840
tccataattg taactgattt attcttgaat aacaacttca atgaaatcaa gcaacaaagc	900
tgatttcaac agaggaaaaa acagaacaag aaaacaaaaa cagagcatca tccatcaaag	960
tgtaatctca gcagattcaa tagagactaa gcttttgatt ttaatgttta gcaaatgtcc	1020
tatcagtttt ctctttttgt cgaacggtaa tttagagttt tttttgctat atggattttc	1080
gtttttgatg tatgtgacaa ccctcgggat tgttgattta tttcaaaact aagagttttt	1140
gcttattgtt ctctgtctatt ttggatatca atcttagttt tataatcttt ctagttctct	1200
acgtgttaaa tgttcaacac actagcaatt tggctgcagc gtatggatta tggaactatc	1260
aagtctgtgg gatcgataaa tatgcttctc aggaatttga gattttacag tctttatgct	1320
cattgggttg agtataatat agtaaaaaaa tagtctaga	1359

<210> 32
 <211> 1967
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 32

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg	60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac	120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt gggttcagttt tttagatact	180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtcagc cgtgaatcaa	240
caaagagagg gcccataata ctgtcgatga gcatttcctt ataatacagt gtccacagtt	300
gccttccgct aagggatagc caccgcgtat tctcttgaca cgtgtcactg aaacctgcta	360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg	420
taacttttac tcatctcctc caattatttc tgatttcatg catgtttccc tacattctat	480
tatgaatcgt gttatggtgt ataaacgttg tttcatatct catctcatct attctgattt	540
tgattctctt gcctactgaa tttgacccta ctgtaatcgg tgataaatgt gaatgcttcc	600
tcttcttctt cttcttctca gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg	660
gtagattccc cttttttag accacacatc acggatcctt agtctctatt gaatctgctg	720
agattacact ttgatggatg atgctctgtt tttgttttct tgttctgttt tttcctctgt	780
tgaaatcagc tttgttgctt gatttcattg aagttgttat tcaagaataa atcagttaca	840
attatggaat tcaaggttag aaatcttctc tatttttggg ttttgtctgt ttagattctc	900
gaattagcta atcagggtgct gttatagccc ttaattttga gttttttttc ggttgttttg	960
atggaaaagg cctaaaattt gagttttttt acgttggttt gatggaaaag gcctacaatt	1020
ggagttttcc ccgttgtttt gatgaaaaag cccctagttt gagatttttt ttctgtcgat	1080
tcgattctaa aggtttaaaa ttagagtttt tacatttggt tgatgaaaaa ggccttaaat	1140
ttgagttttt ccggttgatt tgatgaaaaa gccctagaat ttgtgttttt tcgtcggttt	1200
gattctgaag gcctaaaatt tgagtttctc cggctgtttt gatgaaaaag ccctaaaattt	1260
gagtttctcc ggctgttttg atgaaaaagc cctaaatttg agttttttcc ccgtgtttta	1320
gattgtttgg ttttaattct cgaatcagct aatcagggag tgtgaaaagc cctaaaattt	1380
gagttttttt cgttgttctg attgttgttt ttatgaattt gcagatggat atccttcttt	1440
gatgctgatc cataattgta actgatttat tcttgaataa caacttcaat gaaatcaagc	1500
aacaaagctg atttcaacag aggaaaaaac agaacaagaa aacaaaaaca gagcatcatc	1560
catcaaagtg taatctcagc agattcaata gagactaagc ttttgatttt aatgttttagc	1620
aaatgtccta tcagttttct ctttttgctg aacggtaatt tagagttttt tttgctatat	1680
ggattttcgt ttttgatgta tgtgacaacc ctcgggattg ttgatttatt tcaaaactaa	1740
gagtttttgc ttattgttct cgtctatttt ggatatcaat cttagtttta tatcttttct	1800
agttctctac gtgttaaatg ttcaacacac tagcaatttg gctgcagcgt atggattatg	1860
gaactatcaa gtctgtggga tcgataaata tgcttctcag gaatttgaga ttttacagtc	1920

tttatgctca ttgggttgag tataatatag taaaaaata gtctaga 1967

<210> 33

<211> 1635

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 33

ggtaccgaac catgcatctc aatcttaata ctaaaaaatg caacaaaatt ctagtggagg	60
gaccagtacc agtacattag atattatctt ttattactat aataatattt taattaacac	120
gagacatagg aatgtcaagt ggtagcggta ggagggagtt ggttcagttt tttagatact	180
aggagacaga accggagggg cccattgcaa ggcccaagtt gaagtccagc cgtgaatcaa	240
caaagagagg gcccataata ctgtcgatga gcattttccct ataatacagt gtccacagtt	300
gcctttccgct aagggatagc caccgcctat tctcttgaca cgtgtcactg aaacctgcta	360
caaataaggc aggcacctcc tcattctcac actcactcac tcacacagct caacaagtgg	420
taacttttac tcatctcctc caattatttc tgatttcatt catgtttccc tacattctat	480
tatgaatcgt gttatgggtg ataaacgttg ttcatatct catctcatct attctgattt	540
tgattctctt gcctactgaa ttgacccta ctgtaatcgg tgataaatgt gaatgcttcc	600
tcttcttctt cttcttctca gaaatcaatt tctgttttgt ttttgttcat ctgtagcttg	660
gtagattccc cttttttag accacacatc acggatcctt agtctctatt gaatctgctg	720
agattacact ttgatggatg atgctctgtt tttgttttct tgttctgttt tttcctctgt	780
tgaaatcagc tttgttgctt gatttcattg aagtgtgtat tcaagaataa atcagttaca	840
attatggaat tcgtggtaac ttttactcat ctctccaat tatttctgat ttcatgcatg	900
tttccctaca ttctattatg aatcgtgtta tgggtgtataa acgttggttc atatctcatc	960
tcatctattc tgattttgat tctcttgcc actgaatttg accctactgt aatcggtgat	1020
aaatgtgaat gcttctctt cttcttcttc ttctcagaaa tcaatttctg ttttgttttt	1080
gttcatctgt agcttgatat ccttcttga tgctgatcca taattgtaac tgatttattc	1140
ttgaataaca acttcaatga aatcaagcaa caaagctgat ttcaacagag gaaaaaacag	1200
aacaagaaaa caaaaacaga gcatcatcca tcaaagtgt atctcagcag attcaataga	1260
gactaagctt ttgattttta tgttttagcaa atgtcctatc agttttctct ttttgtcgaa	1320
cggtaattta gagttttttt tgctatatgg attttcgttt ttgatgtatg tgacaaccct	1380
cgggattggt gattttatttc aaaactaaga gtttttgctt attgttctcg tctatttttg	1440
atatcaatct tagttttata tcttttctag ttctctacgt gttaaagtgt caacacacta	1500
gcaatttggc tgcagcgtat ggattatgga actatcaagt ctgtgggatc gataaatatg	1560
cttctcagga atttgagatt ttacagtctt tatgctcatt gggttgagta taatatagta	1620
aaaaaatagt ctaga	1635

<210> 34
 <211> 240
 <212> DNA
 <213> Solanum tuberosum

<400> 34
 gtccatgatg tcttcagggg ggtagcattg actgatggca tcatagtttt ttttttaaaa 60
 gtatttcctc tatgcatatt attagtatcc aataaattta ctggttgttg tacatagaaa 120
 aagtgcattt gcatgtatgt gtttctctga aattttcccc agtttttggt gctttgcctt 180
 tggagccaag tctctatatg tataagaaaa ctaagaacaa tcacatatat caaatattag 240

<210> 35
 <211> 228
 <212> DNA
 <213> Solanum tuberosum

<400> 35
 acgaacttgt gatcgcgttg aaagatttga acgctacata gagcttcttg acgtatctgg 60
 caatattgca tcagtcttgg cggaatttca tgtgacaaca aggtttgcaa ttctttccac 120
 tattagtagt gcaacgatat acgcagagat gaagtgtctga acaaacatat gtaaaatcga 180
 tgaatttatg tcgaatgctg ggacgggctt cagcaggttt tgcttagt 228

<210> 36
 <211> 2204
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic polynucleotide

<400> 36
 ccgcggtttt ctctccatcg cgtcagaggc cggttttcgt cggcatcgaa gagggccact 60
 cgtttaccgt catttgccaa agcagcgcaa aggcccatga gtgcggtggt ttgcccagca 120
 ccccttttga aagagcaaaa cgtcaaaagt tgcataattct gatcccgctt gtcctgtgaa 180
 acggagtgca tttgtatttt tgttcgtata aatgtttttg tgattatcga tgagtaaaaag 240
 cgttgttaca ctatttttta tttcaaattc gttataatta aattgcaatt gtagcaatta 300
 tattcggttt ttcctgtaaa tatactgttg atttcatatc gagtagggct agactttaat 360
 ctgtctaccc gggcacattt cgtgctggag tattcagacc ttccgctttt tttggaggaa 420
 gctatgtcaa aacacaccag agtcacgtcg agtgagactg ccatcaacca gcatcgatcc 480
 ctgaacgttg aagggttttaa ggtcgtgagt gcccgctctgc gatcggccga gtatgaaacc 540
 ttttcctatc aagcgcgcct gctgggactt tcggatagta tggcaattcg cgttgcggtg 600
 cgtcgcatcg ggggctttct cgaaatagat gcacacacc gagaaaagat ggaagccata 660
 cttcagtcca tcggaatact ctcaagtaat gtatccatgc ttctatctgc ctacgccgaa 720
 gaccctcgat cggatctgga ggctgtgcga gatgaacgta ttgcttttgg tgaggctttc 780
 gccgccctcg atggcctact ccgctccatt ttgtccgtat cccggcgacg gatcgacggt 840
 tgctcgctat tgaaagggtgc cttgtagcac ttgaccacgc acctgacggg agaaaattgg 900

atgcccgatc gcgctcaagt aatcattcgc attgtgccag gaggtggaac caagaccctt	960
cagcagataa tcaatcagtt ggagtacctg tcccgtaaagg gaaagctgga actgcagcgt	1020
tcagcccggc atctcgatat tcccgttccg ccggatcaaa tccgtgagct tgcccaaagc	1080
tgggttacgg aggccgggat ttatgacgaa agtcagtcag acgatgatag gcaacaagac	1140
ttaacaacac acattattgt aagcttcccc gcaggtagcg accaaaccgc agcttatgaa	1200
gccagccggg aatgggcagc cgagatgttt gggtcaggat acggggggtg ccgctataac	1260
tatctgacag cctaccacgt cgaccgcgat catccacatt tacatgtcgt ggtcaatcgt	1320
cgggaacttc tggggcacgg gtggctgaaa atatccaggc gccatcccca gctgaattat	1380
gacggcttac ggaaaaagat ggcagagatt tcacttcgtc acggcatagt cctggatgcg	1440
acttcgagcag cagaaagggg aatagcagag cgaccaatca catatgctga acatcgccgc	1500
cttgagcgga tgcaggctca aaagattcaa ttcgaagata cagattttga tgagacctcg	1560
cctgaggaag atcgtcggga cctcagtcga tcgttcgatc catttcgatc ggacccatct	1620
accggcgaac cggaccgtgc aaccgcacat gacaaacaac cgcttgaaca gcacgcccg	1680
ttccaggagt ccgccggctc cagcatcaaa gccgacgcac ggatccgcgt atcattggag	1740
agcgagcgga gtgcccgaac atccgcgtcc aaaatccctg taattgggca tttcgggatt	1800
gagacttcct atgtcgctga agccagcgtg cgcaaacgaa gcggcatttt cggttacttct	1860
cgcccgggtga ctgacgttgc catgcacaca gtcaagcgcc agcagcgatc aaaacgacgt	1920
aatgacgagg aggcaggctc gagcggagca aaccgtaaag gattgaaggc tgcgcaagtt	1980
gattccgagg caaatgtcgg tgagcaagac actcgcgatg acagcaacaa ggcggctgat	2040
ccggtgtctg cttccatcgg taccgagcaa ccggaagctt ctccaaagcg tccgcgtgac	2100
cgtcacgatg gagaattggg tggacgcaa cgtgcaagag gtaatcgtcg ctcgagctcg	2160
agcgggggga cctagagaca ggaaggaccg aataatggcc gcgg	2204

<210> 37

<211> 1621

<212> DNA

<213> Solanum tuberosum

<400> 37

atggcttctg tgctggcttc tctgtttcca aaactgggct ctttgggtac ttcagatcat	60
gcttctgttg tatccatcaa cctctttgtg gcactccttt gtgcttgcac catcattggg	120
catctcttgg aggagaaccg ctgggttaat gagtccatta ctgccctcat aattggtttg	180
tgtacaggag tggttatctt gctcgtaagt ggtggaaaga gctcacacct tctggttttc	240
agtgaagatc tctttttcat atatgtactt cctccaatca tatttaatgc agggtttcag	300
gtaaaaaaga agcaattttt cgtaaacctt attactataa tgatgttcgg agccattggg	360
accctggtct catgtgccat tatatcatta ggtgccattc aaactttcaa gaagtggac	420
attgaatttc tagatattgg ggattatctt gcaattggag caatatttgc tgccacagat	480
tccgtctgca cattgcaggc cctacatcag gatgagacac ccctccttta cagtcttgta	540

tttggagaag gagttgtaaa tgatgctaca tcggtggtgc ttttcaatgc tattcaaaac	600
ttcgacctta cgagcatgaa tcccagtata gccctcagtt tccttggcaa cttcttctat	660
ctgttccttg ctagcacttt actgggagca ggaactggtc ttcttagtgc ttacattatc	720
aagaagctat attttggcag gcactccaca gatcgtgagg ttgcccttat gatgctcatg	780
gcttacttat catacttgct ggccgaatta ttctatttga gtgggattct caccgtcttt	840
ttctgtggta ttgtaatgtc tcactacact tggcacaatg tgaccgagag ttcaagagtc	900
actacaaggc acacttttgc aactttgtca tttcttgcag agactttcct cttcctctat	960
gtcggcatgg atgcttttga tatcgagaag tggaaatttg ttggtgacag gcctggatta	1020
tcaatttccg tgagttcaat actgatggga ctaatcttgc ttgggagagc tgcctttgtt	1080
tttccattat cattcttatc caacttaatg aagaaatcct cggagcaaaa aattaccttt	1140
aggcagcaag tgataatatg gtgggcaggt ttgatgagag gcgcagtgtc catggcactg	1200
gcatataata agttcactcg tgggggacac actcaactgc aggacaatgc aataatgatt	1260
accagcacga taaccattgt tctattcagc acaatggtat tcggtttaat gacaaaaccc	1320
cttataagtc tcctgctgcc accacagagg caattgagta cagtgtcatc aggcgcaaat	1380
actccaaagt ctctaacagc cccactccta ggcagtcgag aggactctga agttgattta	1440
aatgtttccag atcttcctca cccaccaagt ttgaggatgc tacttaccgc accaagtcac	1500
aaagtgcacg ggtactggcg caagtttgac gatgcattca tgcgccctat gtttggtggt	1560
cggggatttg ctctcctgc ccctggttct ccaacggaac aggggccatg aggtaccaat	1620
c	1621

<210> 38

<211> 1620

<212> DNA

<213> Solanum tuberosum

<400> 38

atggcttctg tgctggcttc tctgtttcca aaactgggct ctttgggtac ttcagatcat	60
gcttctgttg tatccatcaa cctctttgtg gcactccttt gtgcttgcac catcattggt	120
catctcttgg aggagaaccg ctgggttaat gagtccatta ctgccctcat aattggtttg	180
tgtacaggag tggttatctt gtcgtaagt ggtggaaaga actcacacct tctggttttc	240
agtgaagatc tctttttcat atatgtactt cctccaatca tatttaaatgc agggtttcag	300
gtaaaaaaga agcaattttt cgtgaacttc attactataa tgatgttcgg agccattggt	360
accctggctc catgtgccat tatatcatta ggtgcaattc aaactttcaa gaagttggac	420
attgaatttc tagatattgg ggattatctt gcaattggag caatatttgc tgccacagat	480
tccgtctgca cattgcaggt cctacatcag gatgagacac ccctccttta cagtcttgta	540
tttggagaag gagttgtaaa tgatgctaca tcggtggtgc ttttcaatgc tattcaaaac	600
tttgacctta cgagcgtgaa tcccagtata gccctcagtt tccttggcaa cttcttctat	660
ctgttccttg ctagcacttt actgggagca ggaactggtc ttcttagtgc ttacattatc	720

aagaagctgt attttggcag gcactccaca gatcgtgagg ttgcccttat gatgctcatg	780
gcttacttat catacatgct ggctgaacta ttctatttga gtgggattct cactgtattt	840
ttctgtggta ttgtaatgtc tcattacact tggcacaatg tgaccgagag ttcaagagtc	900
actacaaggc acgcttttgc aactttgtca tttcttgcag agactttcct cttcctctat	960
gtcggcatgg atgcttttga tatcgagaag tggaaatttg ttggtgacag gcctggatta	1020
tcaatttccg tgagttcaat actgatggga ttaatcttgc tggggagagc tgcctttgtt	1080
tttccattat cattcttctc caacttaatg aagaaatcct cggagcaaaa aattaccttt	1140
aggcagcaag tgataatatg gtgggcaggt ttgatgagag gcgcagtgtc catggcactg	1200
gcatataata agttcactcg tgggggacac actcaactgc aggacaatgc aataatgatt	1260
accagcacga taaccattgt tctattcagc acaatggtat tcggtttaat gacaaaaccc	1320
cttataagtc tcctgctgcc accacagagg caattgagta cagtgtcatc aggtgcaaat	1380
actccaaagt ctctaacagc cccactccta ggcagtcgag aggactctga agttgattta	1440
aatgtttccag atcttcctca cccaccaagt ttgaggatgc tacttaccgc accaagtcat	1500
aaagtgcacg ggtactggcg caagtttgac gatgcattca tgcgccctat gtttggtggt	1560
cggggatttg ctctcctgc ccctggttct ccaacggaac aggggtccatg aggtacaatc	1620

<210> 39
 <211> 747
 <212> DNA
 <213> Solanum tuberosum

<400> 39	
atggaaaatt cggtaccag gactgtagaa gaagtattca acgatttcaa aggtcgtaga	60
gctggtttta tcaaagcact aactacagat gtcgagaagt ttatcaatc gtgtgatcct	120
gaaaaggaga acttgtgtct ctatgggctt cctaataaaa catgggaagt aaacctcct	180
gtagaggagg tgcctccaga acttccggag ccagcattgg gcataaactt cgcacgtgat	240
ggaatgcaag agaaagactg gttatcactt gttgctgttc acagtgattc atggctgctt	300
tctgttgcac ttacttttgg tgcaagggtt gggttcggca agagtgaag gaagaggctt	360
ttccaaatga taaatgatct cccaacagtg tttgaagttg ttaccggagc tgctaaacag	420
acacgtgatc cccctcacia caatagcaac aaaagcaaat caagtggaaa gcctcgacag	480
ccagagtccc aactcaaggc agtaaagggtg tctccaccta aaatggagaa cgacagtggg	540
gaggaggaag aagaagaaga ggatgaacaa ggagcaactc tctgtggagc ttgtggtgat	600
aattatgcca ctgatgaatt ctggatttgc tgtgatattt gtgagagatg gttccatggc	660
aaatgtgtga agattacccc agcaaaagct gagcatatca agcagtacaa gtgtcctagt	720
tgcagtagca agagagctag agtttaa	747

<210> 40
 <211> 741
 <212> DNA
 <213> Solanum tuberosum

<400> 40
 tgacatctgc caataaagcc aagaataatt ggcattaaca tgaccaaaaa aatgggttgg 60
 cagcattaag tcaaataaaa aagctacttt aatataaaat aatattaaaa tgcttaataa 120
 ccaacagttt ataagaaggt taatgttaac atggatgagg aatgaccaa aggggaatta 180
 tatattaacc tttaaatcaa tctaattctc tctttttggt tctagctata tttactcgat 240
 agataaactc tcttacttga cgaatttttt gatacaagaa gacatatttc atcatgattt 300
 taattcgtcg tgtcaaattt attaaatagt ttaattttta tcgtaaattt agatatgaaa 360
 tttaaaaaaa aataaatata tacatatattg aagaatacat aaaaagtaca tataaatcac 420
 aaatatTTTaa taattcaaga tattaaaaca catagaaaaa taattactta caaagaaatt 480
 cttatttgaa tcctctaaat tcgagaagtg caacacaaac tgagacgaag aaaatgaata 540
 atatttgata agaaatttat tataattgaa tgaccattta agtaattacg ggtaataaca 600
 acacaataag gaactgtagt cttttttaat acatggcaag gaatatgaga gtgtgatgag 660
 tctataaata gaaggcttca ttagtgtaga ggagtcacaa acaagcaata cacaataaaa 720
 attagtagct taaacaagat g 741

<210> 41
 <211> 25
 <212> DNA
 <213> Agrobacterium sp.

<400> 41
 tgacaggata tattggcggg taaac 25

<210> 42
 <211> 25
 <212> DNA
 <213> Agrobacterium sp.

<400> 42
 tggcaggata tattgtggtg taaac 25

<210> 43
 <211> 25
 <212> DNA
 <213> Agrobacterium sp.

<400> 43
 tggcaggata tataccggtg taatt 25

<210> 44
 <211> 25
 <212> DNA
 <213> Agrobacterium sp.

<400> 44
 cggcaggata tattcaattg taatt 25

<210> 45
 <211> 25
 <212> DNA
 <213> Agrobacterium sp.

<400> 45
 tggtaggata tataccgttg taatt 25

<210> 46
 <211> 25
 <212> DNA
 <213> Agrobacterium sp.

<400> 46
 tggcaggata tatggtactg taatt 25

<210> 47
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial sequence: synthetic oligonucleotide

<220>
 <221> modified_base
 <222> (16)..(16)
 <223> a, c, g, t, unknown or other

<400> 47
 ygryaggata tatwsnvbkg taawy 25

<210> 48
 <211> 25
 <212> DNA
 <213> Rhizobium leguminosarum

<400> 48
 cggcaggata tatcctgatg taaat 25

<210> 49
 <211> 25
 <212> DNA
 <213> Thermoanaerobacter tengcongensis

<400> 49
 tggcaggagt tattcgaggg taaac 25

<210> 50
 <211> 25
 <212> DNA
 <213> Arabidopsis thaliana

<400> 50
 tgacaggata tatcgtgatg tcaac 25

<210> 51
 <211> 25
 <212> DNA
 <213> Arabidopsis thaliana

<400> 51
 gggaagtaca tattggcggg taaac 25

<210> 52
 <211> 25

<212> DNA
 <213> *Oryza sativa*
 <400> 52
 ttacaggata tattaatatg tatga 25

<210> 53
 <211> 25
 <212> DNA
 <213> *Homo sapiens*
 <400> 53
 taacatgata tattcccttg taaat 25

<210> 54
 <211> 25
 <212> DNA
 <213> *Solanum tuberosum*
 <400> 54
 tgacaggata tatggtaatg taaac 25

<210> 55
 <211> 25
 <212> DNA
 <213> *Solanum tuberosum*
 <400> 55
 tggcaggata tataccgatg taaac 25

<210> 56
 <211> 292
 <212> DNA
 <213> *Saccharomyces cerevisiae*
 <400> 56
 ttcttcgcca gaggtttggt caagtctcca atcaagggtg tcggcttggtc taccttgcca 60
 gaaatttacg aaaagatgga aaagggtcaa atcggttggtgata gatacggttggt tgacacttct 120
 aaataagcga atttcttatg atttatgatt tttattatta aataagttat aaaaaaata 180
 agtgtataca aattttaaaag tgactcttag gttttaaaac gaaaattctt attcttgagt 240
 aactctttcc tgtagggtcag gttgctttct caggtatagc atgagggtcgc tc 292

<210> 57
 <211> 25
 <212> DNA
 <213> Artificial sequence
 <220>
 <223> Description of Artificial sequence: Synthetic primer

<220>
 <221> modified_base
 <222> (14)..(14)
 <223> a, c, g, t, unknown or other

<220>
 <221> modified_base
 <222> (16)..(16)
 <223> a, c, g, t, unknown or other

<220>
 <221> modified_base
 <222> (18)..(18)
 <223> a, c, g, t, unknown or other

 <400> 57
 tgrcaggata tatnvdntg taaac 25

<210> 58
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic oligonucleotide

 <400> 58
 ccgcggtgat cacaggcagc aac 23

<210> 59
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic oligonucleotide

 <400> 59
 aagcttccag ccagccaaca gctccccgac 30

<210> 60
 <211> 45
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic oligonucleotide

 <400> 60
 aagcttggt actagtgcga gatctctaag agaaaagagc gtta 45

<210> 61
 <211> 41
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic oligonucleotide

 <400> 61
 gcatgctcga gataggtgac cacatacaaa tggacgaacg g 41

<210> 62
 <211> 34
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic oligonucleotide

 <400> 62
 actagtgtt acccgccaat atatcctgtc agag 34

<210> 63
 <211> 35
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic oligonucleotide

 <400> 63
 aagctttggc aggatatt gtggtgtaa cgaag 35

<210> 64
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic primer

 <400> 64
 cggtgtaagt gaactgcagt tgccatg 27

<210> 65
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic primer

 <400> 65
 catcggcctc actcatgagc agattg 26

<210> 66
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic oligonucleotide

 <400> 66
 cacgctaagt gccggccgtc cgag 24

<210> 67
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic oligonucleotide

 <400> 67
 tcctaatacga cggcgcaccg gctg 24

<210> 68
 <211> 29
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 68
 aaagttgaat tcaaatgaga aatttattc 29

<210> 69
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 69
 ttttaagctt tcataataac attctaatt 28

<210> 70
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 70
 gaaccatgca tctcaatc 18

<210> 71
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 71
 gtcaggatcc ctaccaagct acagatgaac 30

<210> 72
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 72
 ggatccgagt gtgggtaagt aattaag 27

<210> 73
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 73
 gaattctgtg ctctctatgc aaatctagc 29

<210> 74
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer
 <400> 74
 ggaacattga agctgtgg 18

<210> 75
 <211> 27
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic primer
 <400> 75
 cgaattcatg gcaagcttgt gcaatag 27

<210> 76
 <211> 30
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic primer
 <400> 76
 cgaattctta acaatctgca agactgatcg 30

<210> 77
 <211> 24
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic primer
 <400> 77
 gagagatctt gataagacac aacc 24

<210> 78
 <211> 35
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic primer

<220>
 <221> misc_feature
 <222> (7)
 <223> "a" to "c" mutation

<220>
 <221> misc_feature
 <222> (14)
 <223> "a" to "c" mutation

<220>
 <221> misc_feature
 <222> (17)
 <223> "a" to "c" mutation
 <400> 78
 cattaccata agcccactgt atattagctt gttgc 35

<210> 79
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic primer

 <400> 79
 gtgcttatag aattggtggc 20

 <210> 80
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic primer

 <400> 80
 tagttcccgg gagttcagtg 20

 <210> 81
 <211> 50
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic primer

 <220>
 <221> misc_feature
 <222> (17)
 <223> "a" to "g" mutation

 <220>
 <221> misc_feature
 <222> (29)
 <223> "a" to "t" mutation

 <400> 81
 ctccccgggaa ctataggaaa cattcctctc ggtcctgtcc acatctggtc 50

 <210> 82
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic primer

 <400> 82
 gtgtgatatc tgttcttttc c 21

 <210> 83
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 83
gaatgagctt gacaaggcgg ag 22

<210> 84
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 84
ctggcgataa cggaactgtt g 21

<210> 85
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 85
gtccatgatg tcttcagggt ggta 24

<210> 86
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 86
ctaataatttg atatatgtga ttgt 24

<210> 87
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 87
acgaacttgt gatcgcgttg aaag 24

<210> 88
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 88
actaagcaaa acctgctgaa gccc 24

<210> 89
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer
 <400> 89
 cccgggatgg cttctgtgct ggct 24

<210> 90
 <211> 24
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic primer
 <400> 90
 ggtacctcat ggaccctggt ccgt 24

<210> 91
 <211> 32
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic primer
 <400> 91
 cccgggtatg gaaaattcgg taccaggac tg 32

<210> 92
 <211> 25
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic primer
 <400> 92
 actagttaaa ctctagctct cttgc 25

<210> 93
 <211> 17
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic oligonucleotide

<220>
 <221> modified_base
 <222> (2)..(2)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (6)..(6)
 <223> a, c, g or t

<220>
 <221> modified_base
 <222> (10)..(15)
 <223> a, c, g or t
 <400> 93
 angatntatn nnnnngt 17

<210> 94
 <211> 25
 <212> DNA
 <213> Triticum sp.

<400> 94
 tggcaggata tatgagtgtg taaac 25

<210> 95
 <211> 26
 <212> DNA
 <213> Triticum sp.

<400> 95
 ttggcaggat atatccctct gtaaac 26

<210> 96
 <211> 244
 <212> DNA
 <213> Solanum tuberosum

<400> 96
 gtccatgatg tcttcagggt ggtagcattg actgattgca tcatagtgtg tttttttttt 60
 taaagtatgt cctctatgca tattattagc atccaataaa tttactgggt gttgtacata 120
 gaaaaagtgc atttgcattg atgtgtttct ctgaaatttt cccagtttt tggtgctttg 180
 cctttggagc caagtctcta tatgtaataa gaaaactaag aacaatcaca tatatcaaatt 240
 atta 244

<210> 97
 <211> 227
 <212> DNA
 <213> Solanum tuberosum

<400> 97
 acgaacttgt gatcgcttg aaagatttga acgctacata gagcttcttg acgtatctgg 60
 caatattgca tcagtcttgg cggaatttca tgtgacaaaa ggtttgcaat tctttccact 120
 attagtagtg caacgatata cgcagagatg aagtgtctgaa caaacatatg taaaatcgat 180
 gaatttatgt cgaatgctgg gacgggcttc agcagggttt gcttagt 227

<210> 98
 <211> 416
 <212> DNA
 <213> Solanum tuberosum

<400> 98
 gtttacatta ccatatatcc tgtcagaggt atagaggcat gactggcatg atcactaaat 60
 tgatgcccac agaggagact tataacctac aggggcacgt agttctagga cttgaaagtg 120
 actgaccgta gtccaactcg gtataaagcc tactcccaac taaatatatg aaatttatag 180
 cataactgca gatgagctcg attctagagt aggtaccgag ctcgaattcc ttactcctcc 240
 acaaagccgt aactgaagcg acttctatgt ttctcaacct tcggacctga cgatcaagaa 300
 tctcaatagg tagttcttca taagttagac tatccttcat agctacactt tctaaaggta 360

cgatagattt tggatcaacc acacacactt cgtttacatc ggtatatatc ctgcc

416

<210> 99

<211> 181

<212> PRT

<213> Solanum tuberosum

<400> 99

Met Arg Asn Leu Phe Pro Ile Leu Met Leu Ile Thr Asn Leu Ala Leu
1 5 10 15

Asn Asn Asp Asn Asn Asn Asn Asn Asn Asn Asn Asn Tyr Asn Leu
20 25 30

Ile His Ala Thr Cys Arg Glu Thr Pro Tyr Tyr Ser Leu Cys Leu Thr
35 40 45

Thr Leu Gln Ser Gly Pro Arg Ser Asn Glu Val Glu Gly Gly Asp Ala
50 55 60

Ile Thr Thr Leu Gly Leu Ile Met Val Asp Ala Val Lys Ser Lys Ser
65 70 75 80

Ile Glu Ile Met Glu Lys Ile Lys Glu Leu Glu Lys Ser Asn Pro Glu
85 90 95

Trp Arg Ala Pro Leu Ser Gln Cys Tyr Val Ala Tyr Asn Ala Val Leu
100 105 110

Arg Ala Asp Val Thr Val Ala Val Glu Ala Leu Lys Lys Gly Ala Pro
115 120 125

Lys Phe Ala Glu Asp Gly Met Asp Asp Val Val Ala Glu Ala Gln Thr
130 135 140

Cys Glu Tyr Ser Phe Asn Tyr Tyr Asn Lys Leu Asp Phe Pro Ile Ser
145 150 155 160

Asn Leu Ser Arg Glu Ile Ile Glu Leu Ser Lys Val Ala Lys Ser Ile
165 170 175

Ile Arg Met Leu Leu
180

<210> 100

<211> 172

<212> PRT

<213> Nicotiana tabacum

<400> 100

Met Arg Asn Leu Phe Pro Ile Phe Met Leu Ile Thr Asn Leu Ala Phe
1 5 10 15

Asn Asp Asn Asn Asn Ser Asn Asn Ile Ile Asn Thr Thr Cys Arg Ala
Page 45

20 25 30
 Thr Thr Asn Tyr Pro Leu Cys Leu Thr Thr Leu His Ser Asp Pro Arg
 35 40 45
 Thr Ser Glu Ala Glu Gly Ala Asp Leu Thr Thr Leu Gly Leu Val Met
 50 55 60
 Val Asp Ala Val Lys Leu Lys Ser Ile Glu Ile Met Lys Ser Ile Lys
 65 70 75 80
 Lys Leu Glu Lys Ser Asn Pro Glu Leu Arg Leu Pro Leu Ser Gln Cys
 85 90 95
 Tyr Ile Val Tyr Tyr Ala Val Leu His Ala Asp Val Thr Val Ala Val
 100 105 110
 Glu Ala Leu Lys Arg Gly Val Pro Lys Phe Ala Glu Asn Gly Met Val
 115 120 125
 Asp Val Ala Val Glu Ala Glu Thr Cys Glu Phe Ser Phe Lys Tyr Asn
 130 135 140
 Gly Leu Val Ser Pro Val Ser Asp Met Asn Lys Glu Ile Ile Glu Leu
 145 150 155 160
 Ser Ser Val Ala Lys Ser Ile Ile Arg Met Leu Leu
 165 170
 <210> 101
 <211> 166
 <212> PRT
 <213> Nicotiana tabacum
 <400> 101
 Met Lys Asn Leu Ile Phe Leu Thr Met Phe Leu Thr Ile Leu Leu Gln
 1 5 10 15
 Thr Asn Ala Asn Asn Leu Val Glu Thr Thr Cys Lys Asn Thr Pro Asn
 20 25 30
 Tyr Gln Leu Cys Leu Lys Thr Leu Leu Ser Asp Lys Arg Ser Ala Thr
 35 40 45
 Gly Asp Ile Thr Thr Leu Ala Leu Ile Met Val Asp Ala Ile Lys Ala
 50 55 60
 Lys Ala Asn Gln Ala Ala Val Thr Ile Ser Lys Leu Arg His Ser Asn
 65 70 75 80
 Pro Pro Ala Ala Trp Lys Gly Pro Leu Lys Asn Cys Ala Phe Ser Tyr
 85 90 95

Lys Val Ile Leu Thr Ala Ser Leu Pro Glu Ala Ile Glu Ala Leu Thr
100 105 110

Lys Gly Asp Pro Lys Phe Ala Glu Asp Gly Met Val Gly Ser Ser Gly
115 120 125

Asp Ala Gln Glu Cys Glu Glu Tyr Phe Lys Gly Ser Lys Ser Pro Phe
130 135 140

Ser Ala Leu Asn Ile Ala Val His Glu Leu Ser Asp Val Gly Arg Ala
145 150 155 160

Ile Val Arg Asn Leu Leu
165

<210> 102
<211> 277
<212> DNA
<213> Solanum tuberosum

<400> 102
ctggcgataa cggaactggt ggaggatatt ggtttggaag atgaagatac tattgcggtg 60
actctggtgc caaagagagg tggatgaagg atctccattg aaagtgcgac gatcagcttt 120
gcagattggt aattagcttc tattgaatct gctgagatta cactttgatg gatgatgctc 180
tgtttttggt ttcttggtct gttttttcct ctgttgaaat cagctttggt gcttgatttc 240
attgaagttg ttattcaaga ataaatcagt tacaatt 277

<210> 103
<211> 300
<212> DNA
<213> Solanum tuberosum

<400> 103
ctggcgataa cggaactggt ggaggatatt ggattggaag atgaagatac tattgcggtg 60
actttggttc caaaagtagg tggatgaagg gtatccattg aaagtgtgga gatcaagctt 120
gaggattggt aagtcctcat gagttggtgg ctacgggtacc aaattttatg tttaattagt 180
attaatgtgt gtatgtgttt gattatgttt cggttaaaat gtatcagctg gatagctgat 240
tactagcctt gccagttggt aatgctatgt atgaaataaa taaataaatg gttgtcttct 300

<210> 104
<211> 296
<212> DNA
<213> Solanum tuberosum

<220>
<221> modified_base
<222> (54)..(54)
<223> a, c, g, t, unknown or other

<220>
<221> modified_base
<222> (166)..(166)
<223> a, c, g, t, unknown or other

<220>
 <221> modified_base
 <222> (223)..(223)
 <223> a, c, g, t, unknown or other

 <400> 104
 ctggcgataa cggaactggt ggaggataat ggattggaag atgaaggtac tatngcggta 60
 acttttggttc caaaagttgg tggatgaagg gtatccattg aaagtgcgga gatcaagctt 120
 gaggattggt aagtcctcat gagttggtgg ctatggtacc aaattntatg ttttaattagt 180
 attaattgtgt gtgtttgatt atgtttcggt taaaatgtat canctggata gctgattact 240
 agcctttccca gttgttaatg ctatgtatga aatacataaa taaatgggtg tcttcc 296

 <210> 105
 <211> 13
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic primer

 <400> 105
 ygrcaggata tat 13

 <210> 106
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic primer

 <220>
 <221> modified_base
 <222> (11)..(15)
 <223> a, c, g, t, unknown or other

 <400> 106
 caggatatat nnnnnkgtac ac 22

 <210> 107
 <211> 25
 <212> DNA
 <213> Arabidopsis thaliana

 <400> 107
 tggtaggata cattctgatg tagat 25

 <210> 108
 <211> 25
 <212> DNA
 <213> Arabidopsis thaliana

 <400> 108
 tgacaggata tatcgtgatg tcaac 25

 <210> 109
 <211> 25
 <212> DNA

<213> Arabidopsis thaliana
 <400> 109
 tggtaggata cattctgatg tagta 25

 <210> 110
 <211> 25
 <212> DNA
 <213> Oryza sativa
 <400> 110
 tggcaggata tcttggcatt taaac 25

 <210> 111
 <211> 25
 <212> DNA
 <213> Oryza sativa
 <400> 111
 tgtcaggata tatatcgata tgaac 25

 <210> 112
 <211> 25
 <212> DNA
 <213> Oryza sativa
 <400> 112
 tgtcaggata tatatcgata tgaac 25

 <210> 113
 <211> 25
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic primer

 <220>
 <221> modified_base
 <222> (14)..(18)
 <223> a, c, g, t, unknown or other
 <400> 113
 ygrcaggata tatnnnnnkg taaac 25

 <210> 114
 <211> 18
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic primer
 <400> 114
 gaccacaccc gtcctgtg 18

 <210> 115
 <211> 13
 <212> DNA
 <213> Artificial Sequence
 <220>

<223> Description of Artificial Sequence: Synthetic primer
 <400> 115
 ygrcaggata tat 13

<210> 116
 <211> 12
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic primer
 <400> 116
 atggcgacca ca 12

<210> 117
 <211> 22
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic primer
 <220>
 <221> modified_base
 <222> (11)..(15)
 <223> a, c, g, t, unknown or other
 <400> 117
 caggatatat nnnnnkgtaa ac 22

<210> 118
 <211> 22
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: synthetic oligonucleotide
 <400> 118
 gtccaacttg cacaggaaag ac 22

<210> 119
 <211> 22
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: synthetic oligonucleotide
 <400> 119
 catggatgaa atactcctga gc 22

<210> 120
 <211> 24
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic primer
 <400> 120

gttcagacaa gaccacagat gtga

24

<210> 121

<211> 74

<212> PRT

<213> Solanum tuberosum

<400> 121

Met Ser Ser Thr Ser Asn Val Gly Gln Asp Cys Leu Ala Glu Val Thr
1 5 10 15

Ile Ser Tyr Gln Trp Val Gly Arg Val Ile Asn Tyr Asn Phe Phe Leu
20 25 30

Leu Ile His Trp Tyr Thr Val Val Glu Ala Ser Thr Gly Ile Thr Phe
35 40 45

Gln Ile Phe Pro Ile Gly Ile Arg Ser Glu Asp Asp Arg Ser Phe Tyr
50 55 60

Glu Lys Ala Asp Arg Phe Ala Trp Val Thr
65 70

<210> 122

<211> 51

<212> PRT

<213> Solanum tuberosum

<400> 122

Met Ser Ser Glu Ser Thr Phe Ser Lys Thr Pro Asn Gly Arg Ala Thr
1 5 10 15

Asp Val Gly Ile Pro Thr Glu Glu Gly Thr Phe Pro Phe Arg Tyr Ala
20 25 30

Ile Leu Arg Asp Leu Ala Pro Thr Ile Ser Leu Val Asn Ser Ser Ala
35 40 45

Asp Ile Ala
50

<210> 123

<211> 76

<212> PRT

<213> Solanum tuberosum

<400> 123

Met Ser Glu Gly Val Gly Phe Lys Ser Lys Ile Leu Pro Ser Phe Ala
1 5 10 15

Trp Arg Ser Ala Asn Ile Leu Gly Ser Lys His Val Ala Lys Gln Thr
20 25 30

Phe Pro Phe Leu Ala Arg Thr Glu Thr Cys Glu Arg Thr Ser Gly Met
35 40 45

Ser Gly Val Ile Arg Ala Thr Ala Pro Ser Gly Ile Ser Ser Ser Pro
50 55 60

Leu Thr Asp Phe Ala Thr Lys Ile Val Gly Phe Ser
65 70 75

<210> 124
<211> 62
<212> PRT
<213> Solanum tuberosum

<400> 124
Val Cys Ser Pro Ala Leu Lys Ala Asp Lys Ser Lys Ser Ala Asp Gly
1 5 10 15

Thr Cys Val Asp His Ser Arg Arg Leu Ile Val Val Leu Val Leu Tyr
20 25 30

Pro Gly Met Gly Thr Ser Tyr Ala Thr Ala Phe Ile Ser Ser Pro Pro
35 40 45

Ile Gln Tyr Leu Phe Pro Ser Asp Pro Val Glu Thr Phe Pro
50 55 60

<210> 125
<211> 50
<212> PRT
<213> Solanum tuberosum

<400> 125
Met Leu Gly Ser Leu Val Leu Pro Lys Ser Pro Glu Asn Arg Lys Gln
1 5 10 15

Ala Val Pro Asn Pro His Phe Gln Glu Gln His Leu Val Pro Glu Lys
20 25 30

Pro His Phe Leu Asp Cys Gly Gln Gly Phe Ser Lys Leu Pro Gln Met
35 40 45

His Gln
50

<210> 126
<211> 65
<212> PRT
<213> Solanum tuberosum

<400> 126
Met Val Asn Phe Leu Thr Gln Gly Ile Val Asp Met Glu Thr Ala Phe
1 5 10 15

Gly Ser Pro Lys Met Gly Gly Phe Gly Lys Glu Gln Phe Gly Ala Cys
20 25 30

Val Ser Arg Ser Glu Met Asp Glu Ser Gly Ile Gly Ala Val Met Val
35 40 45

Glu Gln Val Cys Ser Ile Cys Ser Arg His Phe Val Leu Ser Met Gln
50 55 60

Ile
65

<210> 127
<211> 77
<212> PRT
<213> Solanum tuberosum

<400> 127
Met Leu Glu Gly Ser Met Trp Pro Trp Asn Gln Glu Ser Met Lys Arg
1 5 10 15

Ala Phe Leu Asn His His Phe Leu Met Leu His Leu Phe Pro Ala Gln
20 25 30

Arg Pro Pro Gln Ala Ala Asp Pro Val Cys Leu Lys His Gln His Met
35 40 45

His Cys Gly Cys Leu Ser Phe Gln Leu His Leu Ser Lys Leu Ala Pro
50 55 60

Gly Asp Thr Pro Leu Ile Ser Ser Met Phe Ala Leu Asp
65 70 75

<210> 128
<211> 49
<212> PRT
<213> Solanum tuberosum

<400> 128
Met Lys Leu Cys Ser Ser Ile Ile Leu Ser Ile Ile Lys Gln Lys Gln
1 5 10 15

Val Glu Ile Leu Arg Ala Cys Phe Gly Phe Pro Glu Thr Lys Thr Ile
20 25 30

Ser Val Phe Ser Ser Val Ser Trp Asn Trp His Ile Ile Cys Lys Ser
35 40 45

Leu

<210> 129
<211> 64
<212> PRT
<213> Solanum tuberosum

<400> 129
Met Thr Lys Lys Pro Asp Arg Lys Asp Asn Ile Met Pro Tyr Asn Phe
1 5 10 15

Pro Gly Thr Lys Phe Leu Gln Pro Ile Phe Arg Asn Phe Phe Leu Pro
20 25 30

Ser Leu Cys Asp Lys Leu Leu Lys Lys Ser Ile Ser Val Pro Gln Ala
35 40 45

Ile Thr Pro Cys Trp Lys Val Gln Cys Gly His Gly Ile Lys Lys Ala
50 55 60

<210> 130
<211> 115
<212> PRT
<213> Solanum tuberosum

<400> 130
Thr Ile Leu Lys Leu Asp Leu His Thr Phe Asn Gly His Phe Phe Thr
1 5 10 15

Ala Ser Phe Trp Asn Gln Ser His Arg Asn Ser Ile Phe Ile Phe Gln
20 25 30

Ser Asn Ile Leu Gln Gln Phe Ser Tyr Arg Gln Leu Glu Ser Asn Thr
35 40 45

Gly Asn Met Ile Ser Ile Thr Ser Met Asn Met Arg Gln Ala Ser Ile
50 55 60

Thr Pro Cys Lys Leu Arg Leu Ile Lys Leu Ile Cys Ile His Ser Leu
65 70 75 80

Val His Val Gln Lys His Ile Glu Pro Tyr Ile Val Pro Ile Ile Ile
85 90 95

Arg Tyr Phe Ile Glu Cys Gln Tyr Leu Leu Leu Leu Ile Phe Leu Leu
100 105 110

Cys Cys Pro
115

<210> 131
<211> 122
<212> PRT
<213> Solanum tuberosum

<400> 131
Met Lys Gly Lys Glu Lys Pro Arg Glu Met Asn Leu Gln Phe Phe Thr
1 5 10 15

Thr Asn Phe Val Ser Thr Val Ala Ile Ser Thr Met Asn Ile Ser Leu
20 25 30

Leu Phe Lys Ala Lys Arg Val Lys Gly Val Phe Ile Lys Phe Pro His
35 40 45

Ser Thr Arg Ser Gln Leu Ile Leu Gly Tyr Val Leu Leu Ile Arg Arg
50 55 60

Met Ser Arg Gly Ala Asp Ala Glu Phe Ser His Arg Arg Glu Leu Val
65 70 75 80

Val Arg Asn Thr Ile Asp Leu Ile Gly Tyr Arg Arg Ala Thr Thr Val
85 90 95

Tyr Tyr Ile Asn Thr Phe Phe Tyr Met Gly Ser Thr Thr Arg Leu Glu
100 105 110

Ile Arg Arg Trp Tyr Arg Cys Ser Ser Arg
115 120

<210> 132

<211> 104

<212> PRT

<213> Solanum tuberosum

<400> 132

Met Glu Trp Ala Leu Ala Arg Asn Arg Ile Pro Phe Phe Tyr Cys Pro
1 5 10 15

Asn Ser Leu Arg Thr Ser His Gly Lys Gly Tyr Asp Phe His Arg Arg
20 25 30

Lys Arg Ile Gln Ser Ser Thr Asn Leu Tyr Leu Leu Asn Pro Phe Phe
35 40 45

Ser Arg Gln Leu Ile Ser Ile His Ser Thr Ser Cys Pro His Trp His
50 55 60

Gly Gly Ser Lys Lys Ser Asp Leu Asn Arg Val Ser Arg Asn Tyr Pro
65 70 75 80

Cys Leu His Arg Phe Phe Asp Glu Val Cys His Arg Ser Arg Cys Glu
85 90 95

Pro Glu Tyr Glu Gly Cys Phe Gln
100

<210> 133

<211> 92

<212> PRT

<213> Solanum tuberosum

<400> 133

Met Asn Asn Ile Thr His Ser Pro Ile Leu Ile Pro Phe Leu Glu Gln
1 5 10 15

Leu Asn Pro Phe Ile Ser Asn Cys His Met Gln Pro Ile Val Lys Ala
20 25 30

Asn Thr Pro Ile Leu Asn Gly Asn Thr Lys Cys Arg His Ser Ala Asn
35 40 45

Ile Phe Thr Asn Gly Asn Cys Ile Trp Glu Lys Pro Met Asn Lys Ile
50 55 60

Val Asp Gln His Gln Ile His Asn Ser Ile His Ile Ser Cys Glu Ser
65 70 75 80

Lys Val Phe Leu Val Val Pro Ser Glu Ser His Arg
85 90

<210> 134
<211> 57
<212> PRT
<213> Solanum tuberosum

<400> 134
Met Lys Phe Arg Tyr Pro Ser Pro Pro Asn Pro Ile Val Thr Ser Leu
1 5 10 15

Ile Ile Leu Cys Asn Ala Ile Pro Arg Ser Ile Asn Asp Val Asp Gly
20 25 30

Leu Ser Arg Ala Ile Lys Ser Tyr Ile Ser Leu Ser Ile Ser Gln Asn
35 40 45

Ala Ile Val Leu Ser Pro Thr Arg Ala
50 55

<210> 135
<211> 70
<212> PRT
<213> Solanum tuberosum

<400> 135
Met Val Asn Ile Met Thr Ser Ser Ser Met Ala Thr Lys Phe Pro Ser
1 5 10 15

Ile Thr Val Gln Cys Asn Ser Val Leu Pro Trp Gln Val Thr Ser Asn
20 25 30

Phe Ile Pro Phe Val Cys Val Leu Trp Val Glu Val Glu Tyr Lys Tyr
35 40 45

Gln Val Thr Thr Phe Lys His Asn Asn Leu Ile Ile Ile Ile His Ala
50 55 60

Ala Tyr Tyr Leu Phe Ser
65 70

<210> 136
<211> 51
<212> PRT
<213> Solanum tuberosum

<400> 136
Met Ala Lys Leu Val Thr His Glu Ile Glu Val Pro Leu Ser Ser Gln
1 5 10 15

Gly His Cys Glu Lys Met Asp His Leu Val Lys Arg Asn Ser Ser Ile
20 25 30

Asn Asn Arg Arg Ser Ile Cys Gln Ala Arg His Ala Arg Ile His Leu
35 40 45

Phe Val His
50

<210> 137

<211> 72

<212> PRT

<213> Solanum tuberosum

<400> 137

Met Phe Glu Thr Lys Leu Asn Ser Gly Val Val Trp Asn Asp Trp Leu
1 5 10 15

Thr Val Asn Ile Arg Asn Ser Asn Thr Pro Asn Thr Lys Leu Val Leu
20 25 30

Leu His His Val Val Arg Thr Val Pro Ser Ile Glu Ile Ala Asn Asn
35 40 45

Phe Val Phe Leu Ser Ser Arg Ser Pro Phe Thr Ile Asp Tyr Ala Thr
50 55 60

Ile Phe Pro Val Glu Ser Lys Phe
65 70

<210> 138

<211> 66

<212> PRT

<213> Solanum tuberosum

<400> 138

Met Leu Tyr Thr Ser Leu Tyr Ile Ser Tyr Leu Ser Asn Ser Met Leu
1 5 10 15

Leu Pro Ser Trp Thr Asn Leu His His Ser Tyr Ser Leu Asn Asn Leu
20 25 30

Ser Thr Tyr Leu Gly Leu Pro Leu Pro Gly Gly Asn Gln Asn Gln Phe
35 40 45

Leu Pro Gln Lys Gln Ala Gly Gln Gly Pro Ala Tyr Gln Lys His Leu
50 55 60

Arg Gln
65

<210> 139

<211> 25

<212> DNA

<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<220>
 <221> modified_base
 <222> (8)..(8)
 <223> a, c, g, t, unknown or other

<220>
 <221> modified_base
 <222> (10)..(10)
 <223> a, c, g, t, unknown or other

<220>
 <221> modified_base
 <222> (12)..(12)
 <223> a, c, g, t, unknown or other

<400> 139
 gtttacanhn bnatatatcc tgyca 25

<210> 140
 <211> 244
 <212> DNA
 <213> Solanum tuberosum

<400> 140
 gtccatgatg tcttcagggt ggtagcattg actgattgca tcatagtttt tttttttttt 60
 ttaagtattt cctctatgca tattattagt atccaataaa tttactgggt gttgtacata 120
 gaaaaagtgc atttgcattg atgtgtttct ctgaaatttt cccagtttt tgggtgctttg 180
 cctttggagc caagtctcta tatgtaataa gaaaactaag aacaatcaca tatatcaaatt 240
 attt 244

<210> 141
 <211> 239
 <212> DNA
 <213> Solanum tuberosum

<400> 141
 acgaacttgt gatcgcggtt aaagatttga acgctacttg gtcattccaca tagagcttct 60
 tgacgtatct ggcaatattg catcagtctt ggcggaattt catgtgacaa aaggtttgca 120
 attctttcca ctattagtag tgcaacgata tacgcagaga tgaagtgctg aacaaacata 180
 tgtaaaatcg atgaatttat gtcgaatgct gggacgggct tcagcagggt ttgcttagt 239